bea landscape design ltd

TAYLOR WIMPEY (WEST MIDLANDS) LTD & SEVERN ACADEMIES EDUCATIONAL TRUST

WINDERMERE GRANGE, STOURPORT

ARBORICULTURAL IMPACT ASSESSMENT TO BS 5837:2012

our ref:	2079 / EH / AIA001A
date:	7th January 20201
prepared by:	E.C.H
checked by:	T.G-W

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Rev:	Date:	Description:	By:

1.0 INTRODUCTION:

1.1 This Arboricultural Impact Assessment has been prepared by Bea Landscape Design Limited on behalf of Taylor Wimpey (West Midlands) Ltd & Severn Academies Educational Trust for the proposed development at Windermere Grange, Coniston Crescent, Stourport in accordance with BS 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'.

1.2 The assessment has been prepared to accompany a detailed planning application based on the housing layout prepared by the project architects Geoff Perry Associates Ltd.

2.0 SUMMARY OF TREE SURVEY:

2.1 Tree Survey:

2.1.0 The tree survey for the above site was carried out by Bea Landscape Design (refer to Appendix A) on behalf of Taylor Wimpey (West Midlands) Ltd on the 10th December 2020 in accordance with BS 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'.

2.1.1 The following trees are scheduled to be felled, or removed due to their poor condition, being dead or structurally dangerous or and suitable for retention; G05, T08, T13, G15, G17, T47 & G55 with two dead trees within group G19.

2.2 Tree Constraints:

2.2.0 As part of the survey a Tree Constraints Plan 20-79-02 has been prepared to inform future development proposals identifying the root protection areas and shadow patterns in accordance with BS 5837:2012 for those A to C Category trees.

2.2.1 The tree survey also identifies the constraints provided by tree species with particular characteristics that may affect any proposed development and schedules the ultimate predicted tree height and canopy spread.

2.3 Regulatory Protection

2.3.0 It is our understanding that the surveyed trees G06, T25, T26, T29, T33 and T38 are protected by an area Tree Preservation Order No.441 and the site is not within a conservation area.

3.0 IMPACTS OF THE PROPOSED DEVELOPMENT

3.1 Site Layout

3.1.0 A site layout has been prepared for the development area including for the construction of up to 110 dwellings with associated garages, drives, fencing and access roads. In order to assess the impact of the development of the site and the existing trees the proposed site layout was superimposed into the Tree Constraints Plan.

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Site Layout Plan

3.1.1 The proposed development has been designed to retain the majority of the existing trees particularly those to the boundary that have good screening effects and those protected by a Tree Preservation Order. However to accommodate the proposed development it will be necessary to remove a number of trees within the site.

3.2 Tree removal

3.2.0 The assessment highlighted a number of trees that would need to be removed as a result of the development of the site as listed within Table 1 below and as identified within the Tree Retention & Removal Plan 20-79-06. The majority of these trees are internal to the existing site and have little overall impact on the surrounding external landscape.

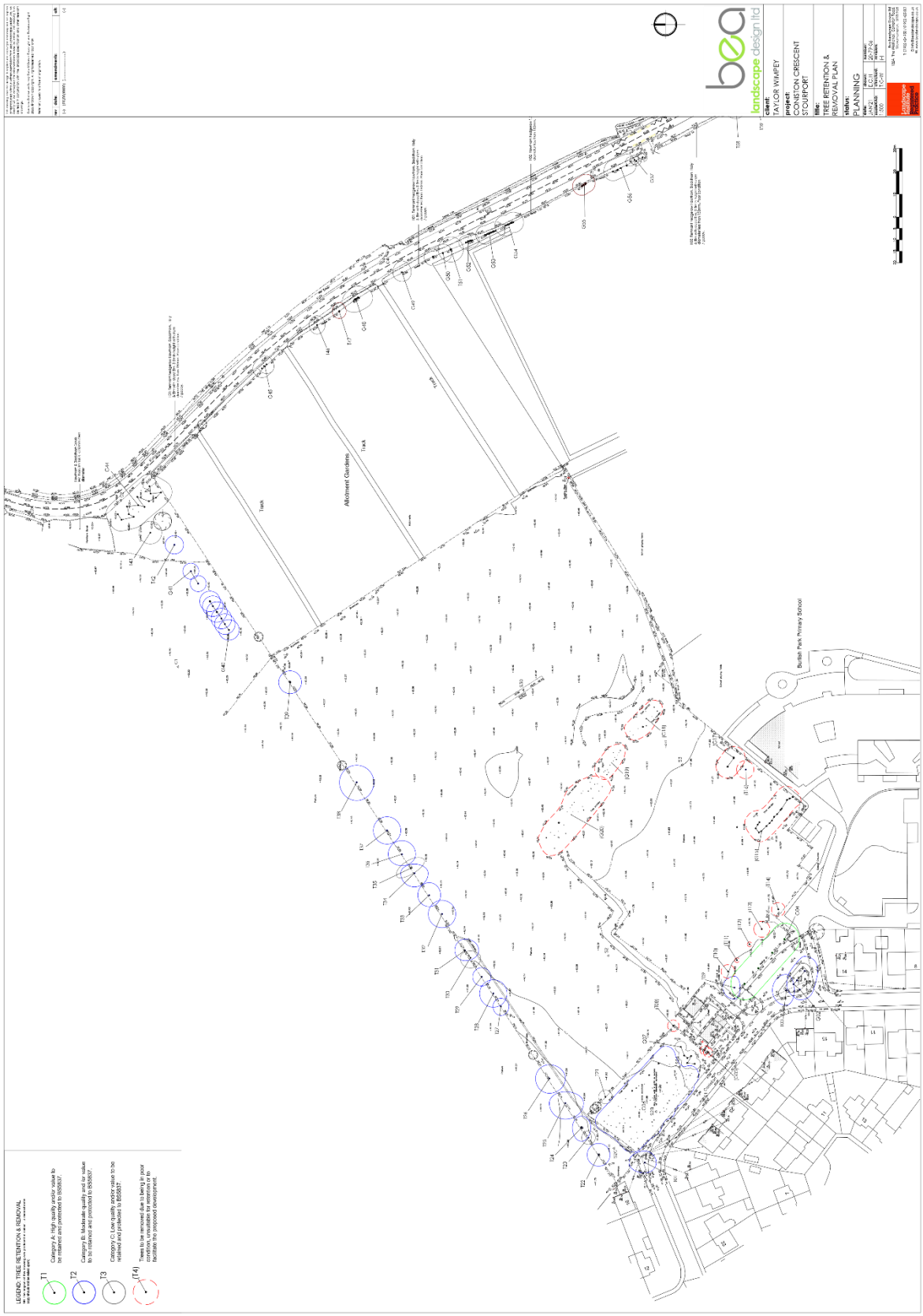
Table 1: Trees to be removed:

No.	*Common Name*	*Cat.*	*Reasons for Removal*
G05	Goat willow & Willow	C1	Unsuitable for retention.
T08	Willow	C1	Unsuitable for retention.
T10	Cockspur hawthorn	C1	To facilitate the proposed development.
T11	Japanese cedar	C1	To facilitate the proposed development.
T12	Japanese cedar	C1	To facilitate the proposed development.
T13	Rowan	U	Unsuitable for retention.
T14	Rowan	C2	To facilitate the proposed development.
G15	Field maple	C2	Unsuitable for retention.
T16	Crab apple	B2	To facilitate the proposed development.
G17	Field maple	C1	Unsuitable for retention.
G18	Ash, Lime, Silver birch & Rowan	C2	To facilitate the proposed development.
G19	Rowans, Ash, Crab apple	C2	To facilitate the proposed development.
G20	Silver birch, Rowan, Beech & Ash.	B2	To facilitate the proposed development.

3.2.1 In summary the proposed development will mean the removal of 7 trees and 6 groups of trees.

3.2.2 It should be noted that tree G05, T08, T13, G15 and G17 were deemed unsuitable for long term retention in the Tree Survey 2079/EH/TR001 and the removal of these trees would be required due to their poor condition and their loss should not be considered as a material consideration in the planning process.

3.2.3 The majority of the remaining trees and groups that will require removal are young trees or semi mature and mature small species trees considered to be of low to moderate quality and value within the tree survey. The location of these trees within the site limits the effect of their removal on the surrounding landscape and the proposed development includes for a significant tree planting within the site which will mitigate for their loss. The removal of these trees is therefore not considered to be a constraint to the proposed development of the site.



Tree Retention & Removal Plan 20-79-06

3.3 Tree retention & pruning:

3.3.0 The assessment also identified a number of trees that should be retained as part of the development proposals as identified within Table 2. below and as identified within the Tree Retention & Removal Plan 20-79-06.

3.3.1 The trees identified for retention are located to the North-eastern boundary with the former golf course and the South-eastern boundary with Coniston Crescent and are generally of medium to high quality and value.

3.3.2 As part of the proposed development it will be necessary to undertake the preliminary management surgery as identified within the tree survey including works to trees to reduce the risk of hazards to the proposed change in landuse i.e crown lifting above footpaths.

3.3.3 The tree pruning required is of a minor extent and is not considered to have a significant impact on the long term health or visual quality of the retained trees.

Table 2: Trees to be retained:

No.	*Common Name*	*Cat.*	*Pruning Works Required*
T01	Scots pine	B2	None required.
G02	Scots pine	B2	None required.
T03	Deodara cedar	B2	None required.
G04	Lime	A2	Lift low canopies above footpath to give 2.4 metres minimum clearance.
G06	Silver birch with occasional Ash, Scots Pine, Lime & Larch	B2	Lift low canopies to West above footpath to give 2.4 metres minimum clearance.
G07	Lawsons cypress	C2	None required.
T09	Hornbeam	B2	None required.
T21	Silver birch	C1	None required.
T22	Field maple	B2	None required.
T23	Cherry	C2	None required.
T24	Field maple	B2	None required.
T25	Turkey oak	B2	None required.
T26	Turkey oak	B2	None required.
T27	Hornbeam	B2	None required.
T28	Silverleaf maple	B2	None required.
T29	Lime	B2	None required.
T30	Silverleaf maple	C2	None required.
T31	Ash	B2	None required.
T32	Silverleaf maple		None required.
T33	Lime	B2	None required.
T34	Norway maple	B2	None required.
T35	Ash	C1	None required.
T36	Norway maple	B2	None required.
T37	Norway maple	B2	None required.
T38	Elm	B2	None required.
T39	Sycamore	B2	None required.
G40	Leyland cypress	B2	None required.
G41	Leyland cypress	B2	None required.
T42	Leyland cypress	B2	None required.
T43	Hawthorn	C2	None required.
G44	Ash, Lombardy poplar	C2	None required.

4.0 IMPACTS OF CONSTRUCTION - DEMOLITION OPERATIONS

4.0.1 The proposed development requires the demolition of a derelict house and garage to the South-eastern boundary with Coniston Crescent.

4.1 Demolition of Buildings

4.1.0 The development requires the demolition of a two storey derelict house and prefabricated single storey garage however the buildings are over 7 metres from the retained trees and as such it is not considered that the works will effect the retained trees provided appropriate tree protection measures are put in place.

4.2 Removal of Hard Surfaces

4.2.0 The proposed development requires the removal of the existing footpath tarmac hard surfacing in close proximity to or within the root protection (RPA) of the retained trees G04 and T09.

5.0 IMPACTS OF CONSTRUCTION – DIRECT

5.0.1 The construction of the proposed development directly impacts a number of retained trees including works within the root protection area and under the canopy as identified in Table 3 below.

5.1 Root Protection Area

5.1.0 The proposed development has been designed to avoid the need for major works within the root protection area (RPA) of the trees to be retained. However as listed below there are a small number of trees affected by some elements of the proposed development which require work to be undertaken within their root protection areas.

Table 3: Work within the Root Protection Area:

No.	*Common Name*	*Cat.*	*Works Required*
T01	Scots pine	B2	No dig, porous hard surfacing.
G02	Scots pine	B2	No works to be carried out
T03	Deodara cedar	B2	No works to be carried out
G04	Lime	A2	Removal of existing tarmac. No dig, porous hard surfacing. Post & Rail fence and planting.
G06	Silver birch with occasional Ash, Scots Pine, Lime & Larch	B2	No dig, porous hard surfacing, post & rail fencing and planting.
G07	Lawsons cypress	C2	No works to be carried out
T09	Hornbeam	B2	Removal of existing tarmac. No dig, porous hard surfacing.
T21	Silver birch	C1	Fencing
T22	Field maple	B2	Post & Rail fence & planting
T23	Cherry	C2	Post & Rail fence & planting
T24	Field maple	B2	Post & Rail fence & planting
T25	Turkey oak	B2	Post & Rail fence & planting
T26	Turkey oak	B2	Post & Rail fence & planting

No.	Common Name	Cat.	Works Required
T27	Hornbeam	B2	Post & Rail fence & planting
T28	Silverleaf maple	B2	Post & Rail fence & planting
T29	Lime	B2	Post & Rail fence & planting
T30	Silverleaf maple	C2	Post & Rail fence & planting
T31	Ash	B2	Post & Rail fence & planting
T32	Silverleaf maple		Post & Rail fence & planting
T33	Lime	B2	Post & Rail fence & planting
T34	Norway maple	B2	Post & Rail fence & planting
T35	Ash	C1	Post & Rail fence & planting
T36	Norway maple	B2	Post & Rail fence & planting
T37	Norway maple	B2	Post & Rail fence & planting
T38	Elm	B2	Post & Rail fence & planting
T39	Sycamore	B2	Post & Rail fence & planting
G40	Leyland cypress	B2	No works to be carried out
G41	Leyland cypress	B2	No works to be carried out
T42	Leyland cypress	B2	No works to be carried out
T43	Hawthorn	C2	No works to be carried out
G44	Ash, Lombardy poplar	C2	No works to be carried out

No dig, porous hard surfacing.

5.1.1 The Scots pine tree T01 has new hard surfacing proposed within its root protection areas (RPA). The affected area of the RPA equates to 4 % which is less than the 20% maximum new permanent hard surfacing area as stipulated within BS 5837:2012 guidance.

5.1.2 The Lime trees within group G04 will have new hard surfacing proposed within their root protection areas (RPA). The affected areas equate between 1 to 9 % which is less than the 20% maximum new permanent hard surfacing area as stipulated within BS 5837:2012 guidance.

5.1.3 Hornbeam tree T09 has new hard surfacing proposed within its root protection areas (RPA). The affected area of the RPA equates to 2.5 % which is less than the 20% maximum new permanent hard surfacing area as stipulated within BS 5837:2012 guidance.

Building foundations

5.1.4 The construction of Plot 99 will necessitate the installation of building foundations adjacent to the edge of the root protection area of the Southernmost tree within group G04.

Boundary fence

5.1.5 The proposed fences to the North-eastern and South-eastern boundary crosses the root protection area of trees T01, G06, G04 and T22 to T38.

Soft Landscaping:

5.1.6 Soft landscaping is proposed within the RPA of trees T01, G06, G04 and T22 to T38. to the North-eastern and South-eastern boundary.

5.2 Canopy Spreads

5.2.0 The construction of the footpath will require works to be undertaken beneath the canopies of trees to be retained, however the canopies of these trees are sufficiently above ground level such that no facilitation pruning is required

6.0 IMPACTS OF CONSTRUCTION – INDIRECT

6.1 Site Construction Access

6.1.0 The site is to be accessed by visitors and contractors from Coniston Road using the existing vehicular entrance with haul roads into the site for materials and construction access to be created along the line of the proposed roads within the development, with the road kerbs, subbase and base course being installed at the start of construction.

6.2 Site Compound

6.2.0 The site compound, including porta cabins and portable toilet facilities is to be located at the construction traffic site entrance on the site of the demolished dwelling and outside of the Construction Exclusion Zones of the trees to be retained.

6.3 Delivery & Storage of materials

6.3.0 The delivery and storage of materials will be undertaken using the haul roads as described above with materials being delivered locally to the buildings under construction. All materials are to be stored outside of the Construction Exclusion Zones as identified on the Tree Protection Plan 20-79-07.

6.4 Contractors Parking

6.4.0 A contractors and visitors parking area is to be located adjacent to the site compound adjacent to the site entrance and outside of the Construction Exclusion Zones.

7.0 IMPACTS POST DEVELOPMENT

7.1 Shading of buildings / open space

7.1.0 The majority of the retained trees are to the North-eastern boundary and as such do not impact on the proposed development. The trees to the South-eastern boundary including G04 will shade the frontages of Plots 108 to 110 and cast shade on the rear garden of Plot 99.

7.1.1 Similarly the trees within the pocket woodland G06 will shade parts of the area public open space and natural play area.

7.2 Privacy & Screening

7.2.0 The retention of trees T22 to T39 along North eastern boundary maintains the existing screening of the development area from the former golf course to the Northeast.

7.2.1 Similarly the retention of the pocket woodland G06 and the Hornbeam T09 and Lime trees G04 retains the screening effect of the development area from the Coniston Road.

7.3 Direct damage

7.3.0 The proposed layout provides sufficient space for the majority of the retained trees to grow to maturity without conflicting with the proposed properties. There is the potential for the future canopy growth of the Sycamore tree T39 to conflict with Plot 64, however as a multi stem tree is it considered unlikely to reach the full predicted tree height and canopy spread.

7.4 Seasonal nuisance

7.4.0 Sycamore T39 is a large leaved species that drop leaves in the autumn which will result in increased maintenance requirements to the structures and surfaces located in proximity to Plot 64.

7.4.1 Similarly the leaf litter from the Lime trees G04 will result in increased maintenance requirements to the structures and surfaces located in proximity to Plots 102 to 99 and 180, 109 & 110.

7.5 Species characteristics

7.5.0 Trees are living organisms and exhibit structural and seasonal characteristics that may give rise to conflicts in proximity to buildings, footpaths and hard standing areas.

7.5.1 Lime and Sycamore trees are medium to large leaved deciduous tree species that are attractive to aphids that produce honeydew. When the trees are in leaf the honeydew will be a potential nuisance to the cars parked underneath.

7.6 Future pressure for removal

7.6.0 The proposed development will increase the pressure for removal of the Sycamore T39 and the group of Lime trees G04 due to the honeydew and autumnal leaf litter.

8.0 MITIGATION OF DEVELOPMENT:

8.0.1 As detailed above the proposed development will entail the loss of a number of the existing trees internal to the site with the retention of the trees to the site perimeter. The loss of the trees is to be mitigated with replacement tree planting, with special construction techniques and tree protection measures to provide mitigation where the proposed development construction works are in close proximity to the retained trees.

8.1 Replacement Tree Planting

8.1.0 Mitigation for trees required to be removed to facilitate the development are to be provided in the form of replacement tree planting to plot frontages, within public open space and within or adjacent to the proposed hedges. Tree species are to in keeping with the character of the surrounding landscape including native species such as Field maple, Crab apple, Hornbeam, Silver Birch, Wild cherry where appropriate Lime, Common oak and ornamental species such as Norway Maple.

8.2 Special construction techniques

No dig, permeable hard surfacing

8.2.0 The creation of the proposed access drives, footpaths and hard standing within the RPA of the retained trees is to be mitigated through the use of 'no dig' and permeable porous hard surfacing edged with a no dig support. See details contained in the Arboricultural Method Statement.

8.2.1 In accordance with the BS5837:2012 guidance the new hard surfacing is to be both no dig and porous and as such the new hard surfacing is not considered to be of significant detriment to the health of the trees and the proposed works are not considered to adversely affect the trees.

Building foundations

8.2.2 The construction of building foundations in proximity to the RPA of the retained trees are to be designed in accordance with BS5837:2012 section 7.5 'Special Engineering for foundations within the RPA' and designed by an engineer to minimise root damage using piles or 'pad and beam' foundations.

Boundary fence

8.2.3 To minimise potential root damage the location of fence and gate posts within root protection areas is to be determined by site investigations with hand held tools to avoid large diameter roots considered important for the stability of the trees.

Soft landscaping

8.2.4 To minimise potential root damage during the implementation of soft landscaping no cultivation of topsoil is to be carried out within the RPA with shrubs to be pit planted by hand.

8.3 Tree Protection:

8.3.0 The trees are to be protected from damage during the course of the works in accordance with the guidance of BS5837:2012.

8.3.1 The protection of those trees to be retained has been detailed within the Tree Protection Plans 20-79-07 & 20-79-08 which both identifies Construction Exclusion Zones, the locations of protective barriers, trunk and ground protection as well as other restrictions outlined in the above in accordance with BS 5837:2012.

8.3.2 Special care is to be taken during demolition, in accordance with section 6.2.3 'Ground protection during demolition and construction' as per BS 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations' and to be as specified within an Arboricultural Method Statement and accompanying Tree Protection Plans.

8.4 ARBORICULTURAL METHOD STATEMENT:

8.4.0 In order to inform the carrying out of the proposed works in proximity to the retained existing trees a detailed method statement is to be prepared to specify the working practices to be followed by the contractor to comply with BS5837:2012 and mitigate for the proposed works.

8.4.1 An Arboricultural Method Statement is therefore to be prepared that addresses the following;

a) tree and ground protection measures

b) phasing of construction works;

c) site construction access;

d) space for site huts, temporary toilet facilities (including their drainage) and their temporary structures;

e) space for storing (whether temporary or long-term) materials, spoil and fuel and the mixing of cement and concrete;

f) contractors' car parking;

g) the space needed for foundation excavations and construction works;

h) working space for cranes, plant, scaffolding and access during works;

i) demolition of existing buildings and surfacing

k) bespoke building foundation design

k) all changes in ground level, including the location of retaining walls, steps and making adequate allowance for foundations of such walls and backfilling;

l) installation of new permanent hard surfacing

m) the location and space needed for all temporary and permanent apparatus and service runs, including foul and surface water drains, land drains, soakaways, gas, oil, water, electricity, telephone, television or other communication cables;

n) installation of railings, fences and gates

o) the type and extent of landscape works which will be needed within the protected areas, and the effects these will have on the root system;

r) arboricultural supervision

APPENDIX A

TREE SURVEY

TAYLOR WIMPEY (WEST MIDLANDS) LTD

CONISTON CRESCENT, STOURPORT

TREE SURVEY TO BS 5837:2012

our ref:	2079 / EH / TR001A
date:	16th December 2020
prepared by:	E.C.H
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WINDERMERE GRANGE, CONISTON CRESCENT, STOURPORT

1.0 Introduction:

1.1 The tree survey for the site at Windermere Grange off Coniston Crescent, Stourport was carried out by Bea Landscape Design on behalf of Taylor Wimpey (West Midlands) Ltd & Severn Academies Educational Trust on the 10th December 2020 for submission to the local planning authority Wyre Forest District Council.

1.2 The tree survey inspection was carried out from ground level only and no invasive diagnostic tools were used. This is a pre-development site inspection prepared in accordance with BS5837: 2012 'Trees in relation to design, demolition and construction – Recommendations' and the report is valid and relevant only as part of the planning process.

1.3 It should be noted that tree surveys carried out at specific times of year are subject to seasonal limitations. For example; in spring leaves are not present or are just emerging and fungi are generally not visible (depending on species) which limits the assessment of a trees physiological condition, in summer trees are in leaf which reduces the visibility of the crown and can limit the ability to assess the structural condition with fungi not generally visible (depending on species), in autumn there is a decline in leaf quality / cover affording an improved view of the crown and fungal fruiting bodies can be present, in winter the structure of the crown can be easily assessed however assessment of physiological condition is limited and fungi are generally not visible.

1.4 Trees are dynamic natural structures and require frequent monitoring if predictable failures are to be identified. As such the trees should be re-inspected within at least a two year period from the date of this report or when changes occur to the trees (such as appearance of fungal growths, splits in branches etc.) or changes in their immediate environment occur. Any recommendations for action should also be carried out within this period unless identified in the report as requiring immediate action.

1.5 Some tree failures are not predictable such as those occurring during 'freak weather' conditions and those without external symptoms, these types of failure are not covered by this report.

1.6 The tree survey schedules document 2079/EH/TS001 and survey drawing 20-79-01 are included within this report. The tree survey is based on the topographical survey carried out by Geoff Perry Associates in October 2020

1.7 In accordance with British Standard 5837: 2012 the survey records the tree common names (refer to Appendix A for a key to scientific names), height, stem diameter and branch spread and existing height above ground level of the canopy or first significant branch including life stage, general observations (such as structural, physiological condition and/or preliminary management recommendations) and the estimated remaining contribution in years.

1.8 Each tree is also awarded a category grading based on Table 1 'Cascade Chart for Tree Quality Assessment' of the British Standard as included within Appendix C.

The following are an explanation of the terms used to describe the life stage, physiological condition and sizes referred to within the tree survey schedule.

Life Stage

Young	A tree in the first third of its expected life span.
Semi-mature	A tree within the second third of its expected life span.
Mature	A tree within the final third of its expected life span.
Over mature	A tree in natural decline.
Notable	A mature tree that stands out in the local environment because it is large in comparison with other trees around it. The tree doesn't have any obvious veteran characteristics, but may be taller than ancients and fatter than some veterans. Notable trees are usually worthy of recognition and can be potential, next generation veteran trees.
Transition veteran	A mature tree that shows three veteran features i,e rot sites, holes & water pockets, deadwood, hollowing and fungal fruiting bodies. Transition veterans have some habitat characteristics and may become potentially important veteran trees for biodiversity in time.
Veteran	Non ancient trees of any diameter that show four or more veteran features i.e rot sites, holes & water pockets, deadwood, hollowing and fungal fruiting bodies. These trees show the habitat characteristics of veteran trees that are thought to be important in terms of biodiversity. A veteran tree is a survivor that has developed some of the features found on an ancient tree but not necessarily as a consequence of time, but of its life or environment.
Ancient	An over mature tree identified primarily by the girth. Likely to have abundant veteran tree features. An ancient tree has great aesthetic appeal and is defined by the following characteristics; a small canopy exhibiting stag headedness following crown retrenchment; with a very wide hollowing trunk relative to other trees of the same species and one or more openings to the outside exhibiting the fruiting bodies of heart rot fungi

Physiological condition

Good	The tree appears to have no obvious defects.
Fair	The trees condition is slightly compromised and considered to be remediable.
Poor	The trees condition is significantly compromised and considered non-remediable. Significant defects.

Sizes:

Minor A diameter of less than 25 millimetres.

Moderate A diameter of between 25 to 50 millimetres.

Major A diameter of greater than 50 millimetres.

1.9 This report does not consider any potential influence that trees may have upon load bearing soils beneath existing or proposed structures through abstraction of water by their roots (i.e. soil shrinkage and expansion and subsequent building subsidence and heave). The advice of a structural engineer should be sought with regard to appropriate foundation depths for new buildings with reference to NHBC standards Chapter 4.2 (NHBC, 2011).

2.0 Context:

2.1 The site is located off Coniston Crescent in the Stourport-on-Severn area of the Wyre Forest district as identified in Figure 01. Location Plan.

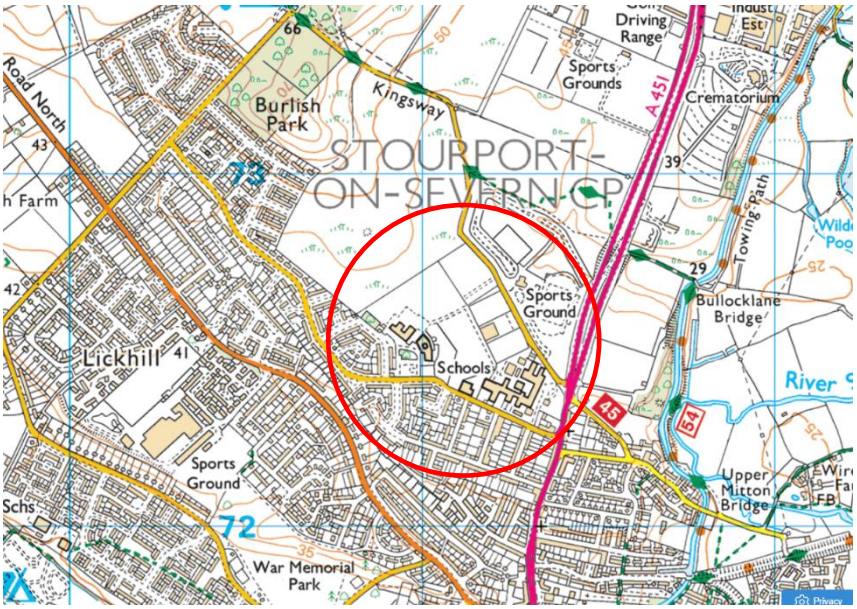

Figure 1. Location Plan

2.2 The main area surveyed is the site of a former school, the buildings of which have largely been demolished. The survey are then extends to the NorthEast to the Kingsway Road and then follows the Kingsway to the A451 Minster Road to the Southeast (refer to Figure 02. Aerial Photograph below).

2.3 The topography of the site is generally level with a gradual fall from North to East.

2.4 In order to inform the design of any future development taking account retained, removed and proposed trees; it is recommended that a soil assessment or geotechnical survey is undertaken to determine the soils shrinkability. This can affect the extent of the root protection area, tree protection and ultimately foundation design.

Figure 2. Aerial Photograph

3.0 Tree Survey Summary:

3.1 The majority of the surveyed trees low to moderate quality and value and are located to the edges of former school site fronting Coniston Crescent and bordering the former the playing fields. The survey then extends to the Northeast to the edge of the nearby allotments and follows the Southern side of the Kingsway Road to the junction with the Minster Road.

3.2 The trees to Coniston Crescent include a number of offsite Scots Pine and Cedar of moderate quality and value (T01, G02 & T03) and a row of four mature Lime G04 considered to be of high quality and value (refer to Figure 3 & 4 below). To the North of these is a row of assorted trees (T09 to T14) including a mature Hornbeam, Rowan, Cockspur thorn and young Japanese cedar of low to moderate quality and value.

3.3 G06 is a 'small pocket woodland' of moderate quality and value of predominantly Silver birch with occasional Scots pine, Ash, Lime, Rowan and Larch and understorey of Elder, Hawthorn, Hazel & Holly.

3.4 Trees G15 and G17 are groups of Field maple tree regrowth from unmaintained hedges with T16 an isolated Crab apple close to the school boundary of moderate quality and value. Groups G18, G19 and G20 are a mixture of young planted Ash, Lime, Rowan, Silver birch, Beech and Crab apple trees of low to moderate quality and value (refer to Figure 5 below).

3.5 To the North western boundary of the survey area (refer to Figure 6 below) is a line of young to semi- mature trees (T22 to T39) of various species including Field maple, Cherry, Turkey oak, Hornbeam, Silver leaf maple, Norway maple, Lime, Elm, Ash and Sycamore considered to be of low to moderate quality and value.

Figure 3. View Northwest along Coniston Crescent towards G06

Figure 4. View South towards G02, T03, G04 &T09-T14

Figure 5. View North towards G19 & G20

Figure 6. View North towards T27 to G40

Figure 7. View East towards G40 to G44

Figure 8. View Northwest along Kingsway towards G48- T58

Figure 9.View West towards T61 to T63

3.6 G40 , G41 and T42 are a number of mature Leyland cypress to the Northwest of the allotment gardens of moderate quality and value (refer to Figure 7 above), leading to an overgrown area of Hawthorn and Blackthorn scrub with a low quality and value group G44 of young / semi mature Ash and occasional Lombardy poplar to the edge of Kingsway Road,

3.7 G45 to G57 are a number of roadside Field maple and Ash of low quality and value (refer to Figure 8 above) regrown from previously coppiced or topped hedgerow trees. T58 and T59 are larger mature Ash trees of low to moderate quality and value with T60 a semi mature Silver birch to the front of a nursery of low quality and value.

3.8 Trees T61, G62 and T63 are a number of mature Sycamore and a False acacia to the road junction with the Minster Road (refer to Figure 9. above) and are part of a larger group of mature trees to the school frontage of moderate quality and value. To the East of the junction are G64 three trees at the end of a longer avenue of mature Austrian pines again of moderate quality and value.

4.0 Tree Preservation Orders & Conservation Areas

4.1 It is our understanding that trees G06, T25, T26, T29, T33 and T38 are protected by Tree Preservation Order No. 441. The site is not within a Conservation Area and no surveyed trees are considered to be Veteran or Ancient or listed on the Woodland Trust Ancient Tree Inventory.

4.2 The Town and Country Planning (Tree Preservation) (England) Regulations 2012 empowers local planning authorities to protect trees in the interests of amenity by making Tree Preservation Orders (TPO). Subject to certain specified exemptions, an application must be made to the local planning authority to carry out works upon or to remove trees that are subject to a TPO. However in certain situations where detailed planning permission has been granted and protected trees are directly affected by the implementation of the approved development, then it is possible to carry out the works necessary to said trees in order to implement the said development.

4.3 Under the Regulations any damage caused to, or the felling of those trees protected by an order will be considered an illegal act and subject to prosecution as set out in the TPO regulations.

5.0 Protected Species

5.1 The Wildlife & Countryside Act 1981 forms the legislative basis for protecting Britain's flora and fauna, together with its 1985 and 1991 amendments, the subsequent variations to the schedule of orders, and strengthening amendments made within the Countryside & Rights of Way Act 2000.

5.2 Nesting birds are afforded statutory protection by the Wildlife & countryside Act 1981. The bird nesting season is officially from February until August with the busiest time for nesting birds from the 1st March until the 31st July according to species.

5.3 As such, consideration should be given to the presence of nesting birds when clipping hedges, pruning or removing trees or removing ivy or other climbing plants during the bird nesting season. Trees, hedges and ivy should be inspected for nests prior to pruning or removal and any work likely to destroy or disturb active nests should be avoided until the young have fledged. Hedges provide valuable nesting sites for a wide range of birds and clipping should therefore be avoided during the months of March to July.

5.3 In Britain all bats are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and under Schedule 2 of the Conservation (Natural Habitats) Regulations 1994 (as amended). In England, under current legislation, it is an offence to:

- Deliberately capture, injure or kill a bat;
- Deliberately disturb in a way that would significantly affect their local distribution or abundance, or affect their ability to survive, breed or rear young;
- Damage or destroy a bat roost (note – this is an 'absolute' offence whereby intent or recklessness does not have to be proved).
- Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat;
- Intentionally or recklessly disturb at bat roost; and
- Intentionally or recklessly obstruct access to a roost.

5.4 In this respect it should be noted that bats utilise tree cavities, cracks and dense ivy as roosts. It is also possible that unidentified bat habitat features may be located high up in the tree crowns and all personnel subsequently carrying out tree works at the site should therefore be vigilant and mindful of the possibility that roosting bats may be present. If any bats roosts are identified during tree works then it is essential that the works are halted immediately and an ecologist investigate them prior to works continuing.

6.0 Pests, Diseases & Fungi:

6.1 As identified within the survey trees T47 & G53 are being colonised by Shaggy polypore (*Inonotus hispidus*) a white and soft rot parasitic fungi that rapidly affects the upper portions of the trunk, main ascending stems and principal branches, leading to branch snap or break out and the trees eventual demise.

7.0 Tree Surgery & Removal:

7.1 The following trees are scheduled to be felled, or removed due to their poor condition, being dead or structurally dangerous and unsuitable for retention; G05, T08, T13, G15, G17, T47 & G55. Two dead trees have also been identified within the group G19.

7.2 The preliminary tree management works and tree removal are to be carried out by an Arboricultural Association accredited tree surgeon in accordance with BS 3998: 2010 'Tree Work - Recommendations' with particular care to be taken where trees are in confined spaces or adjacent to highways.

8.0 Root Protection Area

8.1 In order to inform the future retention of existing trees the root protection area has been calculated for each tree in accordance with BS 5837:2012 Annex D, Table D.1 – Root Protection Area and using the two calculation methods as detailed within clause 4.6.1. The root protection areas are illustrated on the Tree Constraints Plan 20-79-02.

8.2 Where Veteran trees have been identified within the tree survey the root protection area has been based on a minimum of 15 times the diameter of the trunk in accordance with the standing advice from Natural England and the Forestry Commission.

8.3 Where pre-existing site conditions (i.e the presence of retaining walls) or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area had been illustrated

8.4 All trees that are being retained on site should be protected by barriers and/or ground protection before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. These 'Construction Exclusion Zones' are to be protected by barriers and ground protection in accordance with section 6.2 of BS 5837:2012 and as specified and indicated on an approved Tree Protection Plan to be prepared by the project arboriculturalist.

8.5 Of particular importance on sites where there are significant level changes it should be noted that existing ground levels are to be retained within the RPA. Intrusion into soil (other than for piling) within the RPA is generally not acceptable, and topsoil within it should be retained in situ and any re-grading works or the location of retaining features should take this into account. The advice of an arborist should be sought where underground structures are present within the RPA are, or will become, redundant. In general it is preferable to leave such structures in situ, as their removal could damage adjacent tree roots.

8.6 Where construction operations are proposed and permitted within the Root Protection Area precautions should be taken and specified within an Arboricultural Method Statement prepared by the project arboriculturalist to maintain the condition and health of the root system in accordance with Section 7 'Demolition and construction in proximity to existing trees' of BS 5837:2012.

8.7 Where permanent hard surfacing within the RPA is considered unavoidable, site-specific and specialist arboricultural and construction design advice should be sought to determine whether it is achievable without significant adverse impact on trees to be retained. As a general guide new permanent hard surfacing should not exceed 20% of any existing unsurfaced ground within the RPA.

9.0 Above Ground Constraints

9.1 In addition to the condition of the tree the probable impact on proposed buildings or development of trees considered for retention should be assessed to take into account the root protection areas, shadow patterns, species characteristics, maintenance requirements and allowances for space and future tree growth.

Shading:

9.2 In order to assess any unreasonable obstruction of sunlight or daylight to any proposed development tree shadow patterns are also illustrated on the Tree Constraints Plan 20-79-02.

9.3 The orientation of the site and location of trees to the periphery of the survey area mean that the shadows from the more significant and larger trees do not significantly impact on the site area.

Species Characteristics:

9.4 Trees are living organisms and exhibit structural and seasonal characteristics that may give rise to conflicts in proximity to buildings, footpaths and hard standing areas.

9.5 Ash trees are a large spreading deciduous tree species with an upright branching habit, often exhibiting co-dominant stems with included bark. Heavy branches are susceptible to splits, cracks and branch failures. The lower shaded branches in the canopy have the propensity to die off and drop. This can result in increased maintenance requirements to surfaces and possible damage to structures located in the immediate vicinity.

9.6 Silver birch are short lived trees intolerant of hard pruning. They are prone to branch failures on dense branch ends and stem and branch failures due to wood decay and weak wood. Sensitive to fungal pathogens and storm damage from snow, ice and wind.

9.7 Oak trees are typically a large, wide spreading and long lived tree species (over 500 years) that are important for biodiversity and provide habitats for a variety of species including Bats with veteran Oak trees being important for saproxylic insects. Oak trees are resistant to decay and often exhibit fungal fruiting bodies, crown dieback and deadwood within the canopy, typically developing hollow trunks and other veteran tree features without there being a significant effect on longevity.

9.8 Lime and Sycamore are trees that are susceptible to aphids that secrete honeydew which can be damaging to surfaces and vehicles.

9.9 Sycamore and Norway maple are large leaved species that drop their leaves in the autumn. This can result in increased maintenance requirements to structures or surfaces located in the vicinity.

9.10 Leyland cypress trees are evergreen trees often planted as hedges to the boundaries of gardens due to their fast growth rate. With an ultimate height of up to 35 metres they require annual maintenance to maintain the hedge at an appropriate height and scale. The trees are high water demand can affect building foundations and supress other trees and vegetation from growing in close proximity.

9.11 The following trees species are identified within the NHBC Standards Chapter 4.2 as of high water demand and therefore impacting significantly on foundation design on high shrinkability soils; Cypress, Elm, Eucalyptus Hawthorn, Oak, Poplar and Willow.

Ultimate Height and Spread:

9.12 Where surveyed trees are classified as young to semi mature their future growth in terms of predicted height and canopy spread at maturity (refer to Appendix B) should be considered to prevent direct potential damage to structures or buildings, minimise future pressure for removal and increase the effect of shading as described above.

Appendix A: Scientific Names

Common names:	*Scientific Name*
Common alder	*Alnus glutinosa*
Crab apple	*Malus sylvestris*
Common ash	*Fraxinus excelsior*
False acacia	*Robinia pseudacacia*
Silver birch	*Betula pendula*
Downy birch	*Betula pubescens*
Common beech	*Fagus sylvatica*
Wild cherry	*Prunus avium*
Bird cherry	*Prunus padus*
Cherry plum	*Prunus cerasifera*
Horse chestnut	*Aesculus hippocastanum*
Sweet chestnut	*Castanea sativa*
Cypress	*Chamaecyparis cultivar*
Leyland cypress	*Cupressus x leylandii*
Lawson cypress	*Chamaecyparis lawsoniana*
Douglas fir	*Pseudotsuga menziesii*
Common hawthorn	*Crataegus monogyna*
Common hornbeam	*Carpinus betulus*
Holly	*Ilex aquifolium*
Laburnum	*Laburnum anagryoides*
Small leaved lime	*Tilia cordata*
Common lime	*Tilia x europaea*
Large leaved lime	*Tilia platyphyllos*
European larch	*Larix decidua*
Field maple	*Acer campestre*
Norway maple	*Acer platanoides*
Sycamore	*Acer pseudoplatanus*
Common oak	*Quercus robur*
Sessile oak	*Quercus petraea*
Holm oak	*Quercus ilex*
Pear	*Pyrus communis*
Scots pine	*Pinus sylvestris*
Aspen poplar	*Populus tremula*
Lombardy poplar	*Populus italica*
Hybrid black poplar	*Populus x canadensis*
London plane	*Platanus x hispanica*
Norway spruce	*Picea abies*
Rowan	*Sorbus aucuparia*
Whitebeam	*Sorbus aria*
Wild service tree	*Sorbus torminalis*)
Crack willow	*Salix fragilis*
Goat willow	*Salix caprea*
White willow	*Salix alba*
Weeping willow	*Salix babylonica*
Yew	*Taxus baccata*

Appendix B: Predicted Tree Height & Canopy Spread

Common name	*Height (m)*	*Canopy Spread (m)*
Common alder	25	10
Crab apple	9	7
Common ash	30	20
False acacia	25	15
Silver birch	25	10
Downy birch	20	10
Common beech	25	15
Wild cherry	20	10
Bird cherry	15	10
Cherry plum	10	10
Horse chestnut	25	20
Sweet chestnut	30	15
Cypress	15-40	2-5
Leyland cypress	35	5
Lawson cypress	15-40	2-5
Douglas fir	25-50	6-10
Common hawthorn	10	8
Common hornbeam	25	20
Holly	25	8
Laburnum	8	8
Small leaved lime	25	15
Common lime	35	15
Large leaved lime	30	20
European larch	30	4-6
Field maple	10	8
Norway maple	25	15
Sycamore	30	25
Common oak	35	25
Sessile oak	30	25
Holm oak	25	20
Pear	15	10
Scots pine	15-30	6-9
Aspen poplar	20	10
Lombardy poplar	30	5
Hybrid black poplar	35	20
London plane	30	20
Norway spruce	20-40	6
Rowan	15	7
Whitebeam	10-25	10
Wild service tree	20	12
Crack willow	15	15
Goat willow	10	8
White willow	25	10
Weeping willow	12	12
Yew	10-20	8-10

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
TREES UNSUITABLE FOR RETENTION				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.	• 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 U category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality. *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve.*			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
	1 Mainly arboricultural values	**2 Mainly landscape values**	**3 Mainly cultural values, including conservation**	
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years.	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	MID BLUE
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.	Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value, and/or trees offering low or only temporary / transient landscape benefits.	Trees with no material conservation or other cultural value	GREY

Appendix D: Root Protection Area

Single stem diameter *mm*	Radius of nominal circle *m*	Root Protection Area (RPA) *m²*
75	0.90	3
100	1.20	5
125	1.50	7
150	1.80	10
175	2.10	14
200	2.40	18
225	2.70	23
250	3.00	28
275	3.30	34
300	3.60	41
325	3.90	48
350	4.20	55
375	4.50	64
400	4.80	72
425	5.10	81
450	5.40	92
475	5.70	102
500	6.00	113
525	6.30	124
550	6.60	137
575	6.90	150
600	7.20	163
625	7.50	177
650	7.80	191
675	8.10	206
700	8.40	222
725	8.70	238
750	9.00	255
775	9.30	272
800	9.60	290
825	9.90	308
850	10.20	327
875	10.50	346
900	10.80	366
925	11.10	387
950	11.40	408
975	11.70	430
1000	12.00	452
1025	12.30	475
1050	12.60	499
1075	12.90	519
1100	13.20	547
1125	13.50	573
1150	13.80	598
1175	14.10	625
1200	14.40	652
1225	14.70	679
1250	15.00	707

Appendix E: Technical Definitions

Access Facilitation Pruning:	One off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site.
Arboricultural Impact Assessment	An evaluation of the direct and indirect effects of the proposed design on the trees identified within the Tree Survey, where necessary recommending mitigation or amendments to the design.
Arboricultural Method Statement	Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.
Construction Exclusion Zone	An area based on the root protection area from which access is prohibited for the duration of a project
Root Protection Area (RPA)	The minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is considered a priority
Tree Protection Plan	A scale drawing informed by descriptive text where necessary, based upon finalised proposals, showing trees for retention and illustrating the tree and landscape protection measures.

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Any recommendation, opinion or finding stated in this report is based on circumstances and facts as they existed at the time that Bea Landscape Design performed the work. The content of this report has been provided in accordance with the provisions of the BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.

Nothing in this report constitutes legal opinion. If legal opinion is required the advice of a qualified legal professional should be secured. Observations relating to ecology and the condition of built structures have been made from an arboricultural point of view and, unless stated otherwise, do not constitute structural or ecological advice.

Tree Survey in accordance with BS5837:2012

 # Estimated dimensions (for offsite or othewise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m) N	E	S	W	Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m2)
T01	Scots pine	12	490	7	5	5	4.5	4	Mature	Good	Restricted root environment growing within grass verge at side of road. Shallow roots visible in grass, lifting adjacent footpath tarmac.	Prune from wires.	20+	B2	109
G02	Scots pine	12-15	300-560	3	6.5	6	4.5	2	Mature	Good	Restricted root environment growing within grass island. Lifting tarmac to East.	No action required.	20+	B2	142
T03	Deodara cedar	15	430	6	7	3.6	6.5	2	Mature	Good	Restricted root environment growing within grass island. Lifting tarmac to East.	No action required.	20+	B2	84
G04	Lime	12-15	470-640	6	7	6.5	7	3	Semi mature	Good	Restricted root environment with tarmac to West. Roots lifting tarmac & kerbs.	No action required.	40+	A2	185
G05	Goat willow & Willow	6-7	<150	2	2	2	2	/	Young	Poor	Multi stem trees. Random past pruning / surgery. Topped at 2 metres.	Remove to ground level.	<10	U	10
G06	Silver birch with occaisional Ash, Scots Pine, Lime & Larch with understorey of Rowan, Elder, Hawthorn, Hazel & Holly.	12-15	<300	4	4.5	4	4.5	2	Young	Good	Storm damage to Scots pine to North of group.	**TPO: 441 - W1** Lift low canopies to West above footpath to give 2.4 metre minimum clearance.	40+	B2	41
G07	Lawsons cypress	6-7	<220	2.5	2.5	2.5	2.5	/	Young	Fair	Single and twinned stem trees. Random past pruning / surgery, topped at 5 metres.	No action required.	20+	C2	22

Tree Survey in accordance with BS5837:2012

 # Estimated dimensions (for offsite or othewise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m) N	E	S	W	Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m2)
T08	Willow	6	70, 75, 70	2.5	2.5	2.5	2.5	/	Young	Fair	Multi stem tree. Random past pruning / surgery. Topped at 2 metres.	Unsuitable for retention.	<10	U	7
T09	Hornbeam	12	350	5	5	2.5	5	2	Semi mature	Good	Restricted root environment with path & road to North & West. Compression fork with included bark at base of canopy.	No action required.	20+	B2	55
T10	Cockspur hawthorn	5	130	3	3	3	3	1.5	Young	Poor	Random past pruning / surgery. Decay entry points present.	No action required.	10+	C1	8
T11	Japanese cedar	5	90	1	1	1	1	/	Young	Good		No action required.	40+	C1	4
T12	Japanese cedar	5	100	1	1	1	1	/	Young	Good		No action required.	40+	C1	5
T13	Rowan	6	200	3.5	3.5	3.5	3.5	1.5	Semi mature	Dead		Remove to ground level.	<10	U	18
T14	Rowan	7	200	3	3	3	3	1.5	Semi mature	Fair	Major deadwood.	No action required.	10+	C2	18
G15	Field maple	6-10	<300	3.5	6	3	4.5	/	Young / semi mature	Fair / poor	Unmaintained hedgrow trees. Single, twin and multistem trees previously topped at 1.5m. Random past pruning / surgery. Rubbing / fused limbs.	Remove to ground level.	10+	U	41
T16	Crab apple	10	250	4	4	3.5	4	1.5	Mature	Good	Misletoe in canopy.	No action required.	20+	B2	28
G17	Field maple	5-6	<300	5	5	5	5	/	Semi mature	Poor	Multistem trees, eccentic growth. Hedgerow / coppiced trees.	Remove to ground level.	10+	U	40

Tree Survey in accordance with BS5837:2012

 # Estimated dimensions (for offsite or othewise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m) N	E	S	W	Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m2)
G18	Ash, Lime, Silver birch & Rowan	5-7	<250					/	Young	Fair	Single and twinned stem trees. Random past pruning / surgery.	No action required.	20+	C2	28
G19	Rowan, Ash, Crab apple	5-7	<200					/	Young	Fair	Single and twinned stem trees. Random past pruning / surgery.	Remove two dead trees to Northeast of group to ground level.	10+	C2	18
G20	Silver birch, Roawn, Beech & Ash	6-10	<200					2	Young	Good	Single and twinned stem trees. Random past pruning / surgery.	No action required.	20+	B2	18
T21	Silver birch	7	130	3	3	3	3	1.5	Young	Good		Remove wire fence from base of stem.	40+	C1	8
T22	Field maple	12	250, 260	5	5	5	5	/	Semi mature	Good	Twin stemmed. Basal epicormic growth. Furnised to base.	No action required.	20+	B2	58
T23	Cherry	6	100, 110	3	3	3	3	/	Young	Good	Twin stemmed.	No action required.	20+	C2	10
T24	Field maple	10	180, 180, 250	4	5	4	6	/	Semi mature	Good	Multi stem. Furnished to base.	No action required.	20+	B2	57
T25	Turkey oak	13	420	7#	5	8	7	2	Semi mature	Good	Moderate deadwood. Random past pruning / surgery.	**TPO: 441 - T1** No action required.	40+	B2	80
T26	Turkey oak	13	320, 470	6#	6	7	6.5	1.5 S	Semi mature	Fair	Moderate deadwood. Multi stem. Compression forks with included bark.	**TPO: 441 - T2** No action required.	20+	B2	146
T27	Hornbeam	9	380	3.5	3.5	3.5	4	/	Semi mature	Good	Multi stem. Furnished to base.	No action required.	20+	B2	65

Tree Survey in accordance with BS5837:2012

 # Estimated dimensions (for offsite or othewise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m) N	E	S	W	Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m2)
T28	Silver leaf maple	15	200, 200, 200, 300	6	6	6	6	/	Semi mature	Good	Multi stem.	No action required.	20+	B2	95
T29	Lime	10	450	4	4	4	4	/	Semi mature	Fair	Multi stem at 1 metre.	**TPO: 441 - T3** No action required.	20+	B2	92
T30	Silver leaf maple	10	230, 120	4.5	3	4.5	4.5	/	Young	Fair	Random past pruning / surgery.	No action required.	20+	C2	71
T31	Ash	11	330, 340	4.5	5	6	4.5	2	Semi mature	Good	Moderate deadwood. Twin stemmed with compression fork / included bark. Random past pruning / surgery.	No action required.	20+	B2	142
T32	Silver leaf maple	13	200, 150, 150, 200, 150	6	6	6	6	/	Semi mature	Good	Mulit stem from 0.5m. Basal epicormic growth. Random past pruning / surgery.	No action required.	20+	B2	66
T33	Lime	10	460	5	5.5	5	5	2	Semi mature	Good	Multi stem from 1.5m. Random past pruning with major pruning wounds.	**TPO: 441 - T4** No action required.	20+	B2	96
T34	Norway maple	12	340, 280, 330	6	4	6	6	1.5	Semi mature	Good	Multi stem with compression forks / included bark.	No action required.	20+	B2	137
T35	Ash	12	250	7	3.5	7	2.5	2	Young	Fair	Random past pruning / surgery. Moderate deadwood / snags.	No action required.	20+	C1	28

Tree Survey in accordance with BS5837:2012

 # Estimated dimensions (for offsite or othewise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m) N	E	S	W	Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m2)
T36	Norway maple	12	420, 270	6	6	6	5	1.5	Semi mature	Good	Twin stemmed with compression fork / included bark. Random past pruning / surgery.	No action required.	20+	B2	112
T37	Norway maple	10	360	6	6	6	6	2	Semi mature	Good		No action required.	20+	B2	59
T38	Elm	14	520	7.5	7.5	7.5	8	2	Semi mature	Good	Random past pruning / surgery. Major deadwood / snags.	**TPO: 441 - T5** No action required.	10+	B2	122
T39	Sycamore	10	240, 290, 200	5	5	5	5	/	Semi mature	Fair	Multi stem tree furnished to base.	No action required.	20+	B2	82
G40	Leyland cypress	14	350 av	4.5	4.5	4.5	4.5	/	Semi mature	Good		No action required.	20+	B2	55
G41	Leyland cypress	7	240, 220 & 200, 150, 150,150, 100, 100, 100	3.5	3.5	3.5	3.5	/	Semi mature	Fair	Twin and multi stem trees.	No action required.	20+	B2	57
T42	Leyland cypress	14	350, 250	4	4	4	4	/	Semi mature	Good		No action required.	20+	B2	83
T43	Hawthorn	6	200, 190, 100	5	5	5	5	/	Young	Good	Compression fork / included bark at base.	No action required.	20+	C2	38

Tree Survey in accordance with BS5837:2012

 # Estimated dimensions (for offsite or othewise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m) N	E	S	W	Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m2)
G44	Ash, Lombardy poplar (X3)	10-20	<300 av	5	5.5	5	5	2	Young / semi mature	Fair		No action required.	20+	C2	41
G45	Field maple	9	<250	4	4	3	4	/	Young	Fair	Hedgerow trees. Restricted root environment with road to East. Random past pruning / surgery.	No action required.	20+	C2	28
T46	Field maple	9	300	3.5	4	3.5	4	/	Semi mature	Fair	Hedgerow trees. Restricted root environment with road to East. Random past pruning / surgery. Rubbing / fused limbs. Decay entry points present.	No action required.	20+	C2	41
T47	Ash	6	240, 250, 150, 150	3	4	3	3	/	Semi mature	Poor	Remnant hedgerow multi stem trees. Restricted root environment with road to East. Major deadwood / snags. Basal decay with fungal fruiting bodies evident - Shaggy bracket.	Remove to ground level.	<10	U	74
G48	Ash	10-12	<250	5	5	6	5	2	Semi mature	Poor	Remnant hedgerow trees layered at base. Restricted root environment with road to East. Random past pruning / surgery. Major branch socket cavities. Compression fork / included bark. Decay present.	No action required.	10+	C2	28

Tree Survey in accordance with BS5837:2012

 # Estimated dimensions (for offsite or othewise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m) N	E	S	W	Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m2)
G49	Ash	12	<400	4	5	4	4	2	Semi mature	Poor	Remnant hedgerow trees layered at base. Restricted root environment with road to East. Random past pruning / surgery topped at 6 metres. Decay entry points present.	No action required.	10+	C2	72
G50	Field maple	10-12	100, 100, 100, 100 & 100, 100, 100, 150, 150, 150	4	4	4	4	/	Semi mature	Fair	Remnant hedgerow multi stem trees. Restricted root environment with road to East. Rubbing / fused limbs.	No action required.	20+	C2	42
T51	Ash	12	200, 200, 200, 150, 100, 100	5.5	5.5	5.5	5.5	/	Young	Poor	Remnant hedgerow multi stem tree. Restricted root environment with road to East. Rubbing / fused limbs. Decay entry points present.	No action required.	20+	C2	67
G52	Field maple	8	<200	3	3	3	3	/	Young	Fair	Remnant hedgerow layered & topped multi stem tree. Restricted root environment with road to East. Rubbing / fused limbs. Eccentric growth.	No action required.	20+	C2	18

Tree Survey in accordance with BS5837:2012

 # Estimated dimensions (for offsite or othewise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m) N	E	S	W	Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m2)
G53	Ash	10	<150	4	4	4	4	/	Young	Poor	Remnant hedgerow trees layered & topped regrowth. Restricted root environment with road to East & all weather pitch to West. Decay entry present points. Fungal fruiting bodies evident in old stools - Shaggy bracket, Cramp balls.	No action required.	10+	C2	10
G54	Field maple	8	<150	4.5	4.5	4.5	4.5	/	Semi mature	Fair	Hedgrow trees. Restricted root environment with road to East, all weather pitch to West.	No action required.	20+	C2	10
G55	Ash	10	<150	4	4	4	4	/	Young	Poor	Restricted root environment with road to East & all weather pitch to West. Layered hedgerow regrowth. Major pruning wounds. Basal decay with fungal fruiting body evident - Ganoderma.	Remove to ground level.	<10	U	10
G56	Field maple	10	<300	4	5	4	4	/	Young	Poor	Hedgerow trees, regrowth from topped stems at 1 metre. Restricted root environment with road to East & all weather pitch to West. Major pruning wounds. Decay entry wounds present.	No action required.	10+	C2	41
G57	Elm	6-8	<150	2	2	2	2	/	Young	Fair		No action required.	10+	C1	10

Tree Survey in accordance with BS5837:2012

 # Estimated dimensions (for offsite or othewise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m) N	E	S	W	Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m2)
T58	Ash	12	500, 350#	5.5	4	4	5#	2	Mature	Poor	Restricted root environment with road to East & all weather pitch to West. Ivy clad.	Sever ivy and reinspect in 2 years.	20+	C2	168
T59	Ash	18	350, 350	5.5	5	5.5	5	3	Semi mature	Fair	Restricted root environment with road to East & all weather pitch to West. Ivy clad.	Sever ivy and reinspect in 2 years.	20+	B2	110
T60	Silver birch	7	250	3.5	3.5	3.5	3.5	2	Semi mature	Poor	Major pruning wounds. Random past pruning / surgery. Restricted root environment with road to East and wall / car park to West.	No action required.	10+	C1	28
T61	Sycamore	17	320, 330, 300	8	7	4	4	2 E	Semi mature	Fair	Restricted root environment with pavement to East and Road to North. Multi stem tree with compression forks / included barck at base.	No action required.	20+	B2	144
G62	Sycamore	15-17	200-380	3.5	8	6	7#	2	Young	Good	Restricted root environment with pavement to East. Ivy.	Sever ivy.	20+	B2	65
T63	False acacia	17	380	3	4.5	5	5	2 W	Semi mature	Fair	Restricted root environment with pavement to East.	No action required.	20+	B2	65
G64	Black pine	20	430-690					3	Mature	Good	Part of roadside avenue with restricted root environment road to North and pavement to South.	No action required.	20+	B2	215
															0

LEGEND: TREE SURVEY TO BS 5837:2012

NB The original of this drawing was produced in colour - a monochrome copy should not be relied upon).

- T1 — Category A: High quality and/or value.
- T2 — Category B: Moderate quality and /or value.
- T3 — Category C: Low quality and/or value
- T4 — Category U: Trees unsuitable for retention.

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rev	date:	amendments:	ath:
A	05/01/2020	Annotations added & graphics updated.	A

bea landscape design ltd

client:
TAYLOR WIMPEY (WEST MIDLANDS) & SEVERN ACADEMIES EDUCATIONAL TRUST

project:
WINDERMERE GRANGE, STOURPORT

title:
TREE SURVEY PLAN

status:
PLANNING

date:	drawn:	number:
DEC'20	E.C.H	20-79-01
scale@A0:	**checked:**	**revision:**
1:500	T.G-W	A

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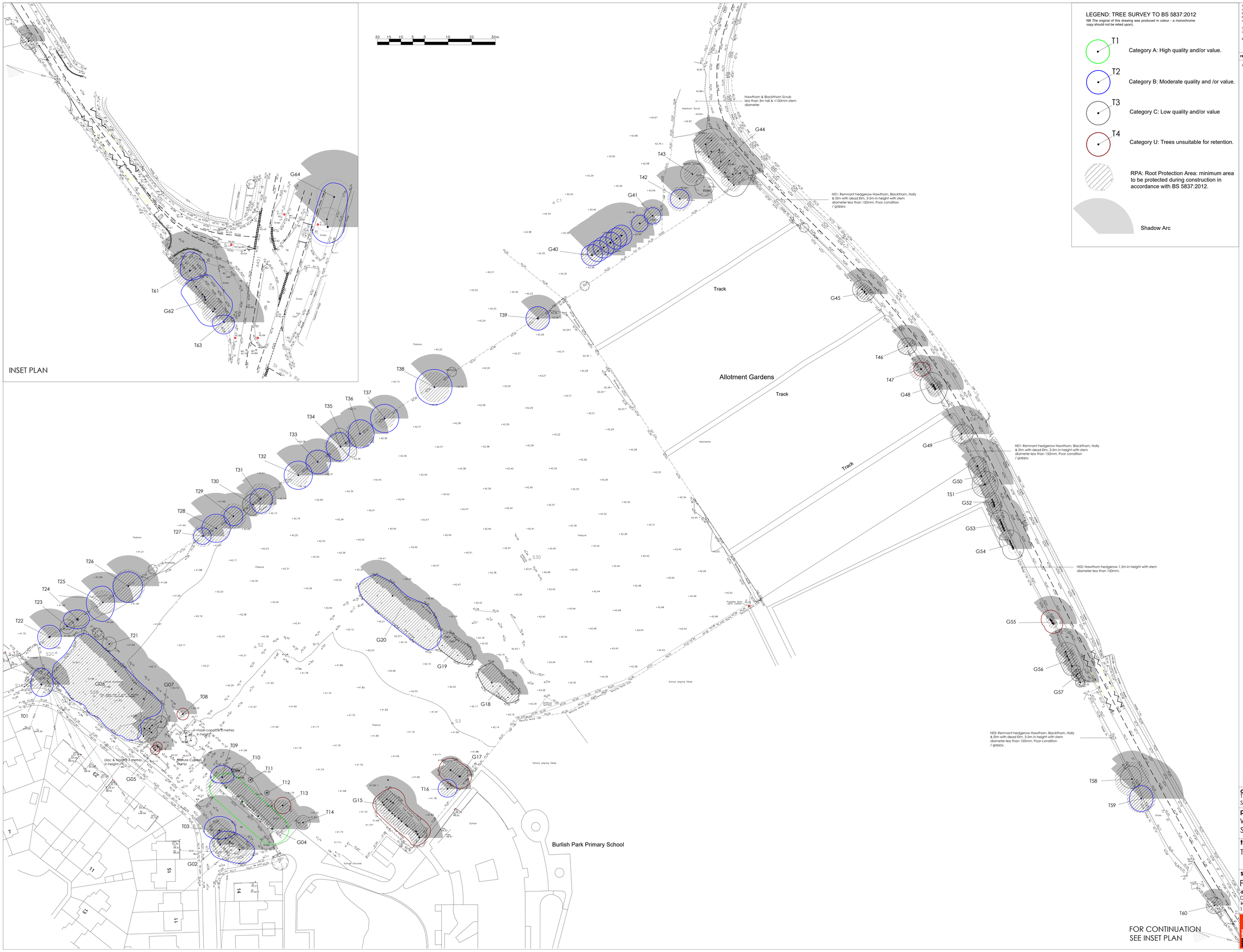

LEGEND: TREE SURVEY TO BS 5837:2012

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- T3 — Category C: Low quality and/or value
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- RPA: Root Protection Area: minimum area to be protected during construction in accordance with BS 5837:2012.
- Shadow Arc

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rev	date:	amendments:	ath:
A	05/01/2020	Annotations added & graphics updated.	E.H

bea landscape design ltd

client:
TAYLOR WIMPEY (WEST MIDLANDS) & SEVERN ACADEMIES EDUCATIONAL TRUST

project:
WINDERMERE GRANGE, STOURPORT

title:
TREE CONSTRAINTS PLAN

status:
PLANNING

date:	drawn:	number:
DEC'20	E.C.H	20-79-02
scale@A0:	**checked:**	**revision:**
1:500	T.G-W	A

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