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Arboricultural Report

BS5837 Tree Survey

Arboricultural Assessment

Tree Protection Specification

Site

**Convent of Mercy
Hillside Drive
Gravesend
Kent
DA12 1NY**

Proposal

**Project 5287
Conversion of Hillside & Rydal to townhouses
Replace single storey extensions with bungalow**

Client

The Convent of Mercy

by

Curtis Barkel

RCArborA, F.Arbor.A, Prof Dip (RFS)

Ref: SA/2311/24

Date: 16 December 2024



Arboricultural Consultant: Curtis Barkel - RCArborA, DipArb(RFS), FARborA
Fellow and Registered Consultant of the Arboricultural Association

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INTRODUCTION

Site Address	Convent of Mercy, Hillside Drive, Gravesend, Kent. DA12 1NY.
Survey Date	14 July 2023
Report Date	16 December 2024
Surveyed by	Curtis Barkel

1.0 Instructions

- 1.1 Sylvanarb has received instructions to carry out a BS5837 tree survey in order to inform an assessment of development proposals and a tree protection specification for the scheme detailed on the Clay Architects, Proposed Site Plan, Ref: 5287PLI/105 Rev.D.

2.0 Documents Supplied

- CAD Surveys, Topographical Survey, dated May 2023.
- Clay Architects, Proposed Site Plan, Ref: 5287PLI/105 Rev.D.

3.0 Aim of Report

- 3.1 To survey existing trees in accordance with BS5837 2012: *Trees in Relation to Design, Demolition and Construction* (BS5837), in order to assess the condition and quality of trees located within and adjacent to the area of development.
- 3.2 To assess the impact of proposals on existing trees.
- 3.3 To advise on tree retention/removal and provide a specification for tree protection measures required to protect trees identified for retention during development works.
- 3.4 To advise on tree work required to accommodate the proposed development.

4.0 Scope of Report

- 4.1 The survey has been carried out in accordance with British Standard 5837:2012 *Trees in Relation to Design, Demolition and Construction* (BS5837).
- 4.2 Subject trees have been inspected considering the current and proposed site use. Assessment categories have been allocated on the condition and merits of the individual tree irrespective of the proposed development.

- 4.3 A detailed hazard assessment of the subject trees has not been carried out, where obvious faults have been noted a further detailed assessment may be recommended in the tree survey comments column (see Appendix A).
- 4.4 The 'Required Tree Works' set out in Section 15.0 detail the tree works required to accommodate the proposed development.
- 4.5 Prior to any tree work being carried out the Local Authority is to be consulted to ascertain whether prior permission is required to carry out such work.
- 4.6 A tree with internal structural faults will often display associated external evidence of such faults, these would be noted in a visual tree inspection. However such signs are not apparent at all times of the year, for example pests and diseases or leaf size and condition. The following findings and recommendations have been drawn from the evidence present on the day of inspection.
- 4.7 All advice given in this report is based on the information available on the day of inspection. Should additional information not available or apparent on the day of inspection come to light, the right is reserved to modify the conclusions found within this report. This report is valid for 12 months notwithstanding change of site conditions, extremes of weather or other such overriding environmental changes.

5.0 Survey Method

- 5.1 The survey included all trees located on the property with a stem diameter greater than 75mm measured at 1.5m from ground level.
- 5.2 Subject trees have been allocated identification numbers prefixed with 'T'.
- 5.3 Where appropriate several trees growing closely together have been surveyed as groups. In such cases the group value is recognised and graded as a whole, as opposed to grading the individual members of the group. Groups are allocated identification numbers prefixed with 'G'.
- 5.4 The trees have been plotted on the arboricultural plans over the locations provided on the topographical survey, all tree locations are assumed to be accurate.
- 5.5 The survey was carried out with the help of the following inspection aids:
- Digital Clinometer To calculate tree heights
 - Diameter tape To measure stem diameters
 - Laser measure To plot canopy extents
- 5.6 Each tree was inspected from ground level noting external faults and features only. The inspection did not include an aerial crown inspection, detailed excavation of the root system or the use of internal decay detection equipment.

BS5837 TREE SURVEY

6.0 Subject Trees

- 6.1 The survey identifies thirty-nine individual trees and fifteen groups.
- 6.2 The trees have been graded into quality assessment categories in accordance with recommendations provided in BS5837:2012 *Trees in Relation to Design, Demolition and Construction*. Three trees are graded in Category A; eleven individuals and two groups in Category B; and all other subject trees are considered to be of low arboricultural value, graded in Categories C and U (see Appendix A for full category definitions):
- 6.3 Table 1 provides a breakdown of tree quality assessment:

Table 1: Retention Category Breakdown

BS5837:2012 Category	Tree Survey Numbers	Total
A	T20, T21, T23	3 x Individuals
B	T8, T10, T12, T22, T27, T29, T32-T35, T37 G10, G11	11 x Individuals 2 x Groups
C	T1-T5, T9, T11, T15, T16, T18, T19, T24-T26, T28, T30, T31, T36 G1-G9, G12-G15	18 x Individuals 13 x Groups
U	T6, T7, T13, T14, T17, T38, T39	7 x Individuals

- 6.4 Trees classified in Category A are considered to be high value trees with a minimum of 40 years potential in the existing setting. These three trees are large specimens that make a notable contribution to the character of both the immediate and wider setting.
- 6.5 Trees classified in Category B are recognised as being of moderate quality and value with a minimum of 20 years potential. These trees serve to complement the environment of the existing setting.
- 6.6 Trees classified in Category C are considered to be of poor form and/or offer limited current or long-term potential. Those trees graded in Category C are of limited wider public amenity value and contribute little to the character of the locality, however their combined contribution to the immediate garden setting is recognised.
- 6.7 The Gravesham BC have confirmed that none of the subject trees are protected by Tree Preservation Order (TPO) and the property is not located within a Conservation Area. As such, the permission of the Local Authority is not required prior to carrying out work to the trees.

PROPOSED WORKS

7.0 Planning Proposal & Assessment

- 7.1 Planning permission is sought for the conversion of part of the existing building to provide two townhouses and the construction of a bungalow to replace various existing single storey extensions.
- 7.2 Access will be gained via the existing driveway, with a continuation of the driveway leading to parking bays to the rear of the building; additional parking is also proposed to the front.
- 7.3 The majority of existing trees are to be retained so as to preserve the character of the property, with extensive habitat and landscaping improvements proposed to mitigate for the trees identified for removal.
- 7.4 All trees identified for retention are to be protected in accordance with BS5837 for the duration of the works programme, this ensuring their successful long-term retention to complement the proposed setting.
- 7.5 The required tree removals result in minimal arboricultural impact and will be of no detriment to the visual amenity of the wider setting; whilst the scheme presents the opportunity for replacement tree planting and extensive landscaping proposals to be secured to enhance the species and habitat diversity of the site.

8.0 Trees Requiring Removal to Accommodate the Scheme

- 8.1 Three individual trees and three small groups, plus part of one further group will require removal to accommodate the scheme.
- 8.2 With the exception of T37, all trees to be removed are identified as being of poor quality and/or low value, graded in BS5837 Categories C or U. The loss of these trees will be of no consequence to the visual amenity of the site or the wider locality.
- 8.3 Tree T37 is a nine metre tall, multi-stemmed, semi-mature tree, it is a tree of only moderate value within a site that hosts a high number of moderate value trees. The tree will not be a suitable choice for retention within the proposed garden setting, immediately to the rear of the proposed bungalow and adjacent townhouse. The loss of the tree will be of no consequence to the visual amenity of the wider setting.
- 8.4 Table 2, on the following page, provides brief details of the trees to be removed; the location of the trees is provided on the Tree Protection Plan at Appendix B.
- 8.5 The scheme presents the opportunity for replacement landscaping and tree planting to be secured by the Local Authority, this will serve to significantly enhance the character of the site, providing sustainable high quality planting and habitats that suitably mitigate for the required losses.

Table 2: Trees Requiring Removal to Accommodate Proposal.

Tree No.	Species	Condition/Comments	Reason for Removal	BS5837 Cat.
T36	Hawthorn	Mature tree of limited long term potential.	Construction of driveway.	C1
T37	Yew	Semi-mature, 4-stem tree of limited wider value.	Contractor access and unsuitable for retention within proposed setting.	B1
T38	Holly	Mature tree in poor physiological condition.	Requires removal irrespective of development.	U
G6	Holly	Semi-mature group of low value.	Construction of parking bays.	C2
G7	Mixed Species	Large shrubs/young self-sown trees	Construction of parking bays.	C2
Part of G12	Mixed Species	Mixed group of natural regeneration.	Construction of driveway.	C2
G15	Leyland Cypress	Two conifers maintained as topped and trimmed features.	Construction of driveway/parking.	C2

TREE PROTECTION MEASURES

9.0 Primary Tree Protection Considerations

- 9.1 Should the planning approval be successful, all trees identified for retention on the approved plans are likely to be protected under planning conditions.
- 9.2 It is therefore imperative that the protection measures set out within this report are fully complied with for the duration of works on site. To cause damage to protected trees can result in Planning Enforcement action being taken.
- 9.3 The majority of damage to trees on development sites occurs either at the early stages of works when protection measures have not been installed promptly enough, or at the final stages when protective measures are taken down prematurely.
- 9.4 An individual, such as the Contract Manager, is to be identified as a point of contact for arboricultural affairs during works. This individual is to be fully aware of the arboricultural requirements on the site and is to be responsible for the monitoring and enforcement of tree protection measures.
- 9.5 The Contract Manager is to ensure that all contractors and operatives involved with the project are aware of the reason and location of tree protection measures prior to commencing any works on site.

10.0 Operations Resulting in Damage to Trees

- 10.1 The following operations are likely to result in significant damage to trees. Damage resulting from these operations may take immediate effect resulting in the rapid death of a tree, or alternatively may result in years or even decades of gradual decline and ultimate early death.
- 10.2 *Compaction of Soil*
Whether from repeated pedestrian passage or due to just a single passing of a vehicle, soil compaction within a Root Protection Area will inevitably lead to root death and may ultimately greatly reduce the longevity of a tree.
- 10.3 *Storage or Spillage of Toxic Materials*
The following materials commonly used on development sites are toxic to trees:
- Builders Sand (due to salt content)
 - Cement
 - Fuels
 - Tarmac

The uncontrolled storage or use of such materials on unsealed surfaces within 10 metres of trees is likely to be detrimental to their long-term health.

- 10.4 *Excavations / Soil Grading / Lowering of Levels*
Contrary to popular belief nearly all of a tree root system is located within the top 1 metre of soil, often with the majority of roots found within 600mm of the soil surface.

The Root Protection Area is the *minimum* area of protection required to retain a tree. The full root system of a tree will extend beyond this, usually to a distance at least equivalent to the height of the tree.

10.5 *Raising of Levels*

Roots absorb both oxygen and water from the soil and therefore develop in free-draining, aerated conditions.

Where levels are raised over tree roots the availability of oxygen is reduced and moisture filtration hindered, tree roots will subsequently be starved of oxygen and water leading to root death, potential disease and reduced longevity.

11.0 **Monitoring and Supervision**

11.1 The site manager is to be made aware of their responsibility to ensure that the protection of retained trees is maintained throughout the development works.

11.2 Should the tree protection measures specified on the Tree Protection Plan require modification as the project progresses, the arboricultural adviser is to first be consulted and then the approval of the LPA Tree Officer is to be gained, prior to any changes being carried out.

11.3 The location and reason for the specified tree protection measures is to be highlighted at the induction of all new contractors involved with the project.

12.0 **Tree Protection Fencing**

12.1 Tree protection fencing is to be installed in the locations specified on the Tree Protection Plan at Appendix B. The fenced off areas are to be treated as Construction Exclusion Zones, with no contractor access permitted without the prior approval of the Local Authority Tree Officer.

12.2 The tree protection fencing is to be installed prior to the commencement of any demolition or ground works.

12.3 Suitable barriers '*fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work...*' (BS5837: s. 6.2.2.1) are to be installed, as such two specifications for protective fencing are required:

- Type 1 (Red line on Tree Protection Plan) To be installed in areas of high development activity;

- Type 2 (Blue line on Tree Protection Plan) To be installed in areas of low development activity.

12.4 Type 1 fencing is to be constructed in accordance with BS5837: 2012 Fig.3 using Heras type panels with the fence bases pinned into position and the panels braced on the tree side to ensure the barrier remains rigid for the duration of works, a specification is provided on the Tree Protection Plan at Appendix B.

- 12.5 Type 2 fencing may comprise of the same specification as the Type 1 fencing, alternatively construction site boundary hoarding can be installed.
- 12.6 Informative signs (model sign provided at Appendix B) are to be laminated and attached to the fencing.
- 12.7 The fencing is to be maintained throughout the development phase and through to completion of all superstructure works. Fencing is to only be removed upon completion of construction works and immediately prior to any approved landscaping.

13.0 General Protection Measures

- 13.1 No access into the fenced off Construction Exclusion Zones is permitted without the prior approval of the LPA Tree Officer.
- 13.2 Other than approved development, no level changes, service runs or storage of materials are permitted within the specified RPA's shown on the Tree Protection Plan.
- 13.3 No fires are permitted where flames will reach within 5m of a tree canopy.
- 13.4 No storage or discharge of materials harmful to tree health is permitted on unsealed surfaces within 10m of any retained tree, including storage of fuels, tarmac, cement and oil.
- 13.5 No cement mixing is to be carried out on unsealed surfaces within 10m of any retained tree.
- 13.6 Details of proposed soft or hard landscaping within Root Protection Areas are to be submitted for approval by the LPA Tree Officer in order to avoid damage to tree root systems.

EXCAVATIONS WITHIN ROOT PROTECTION AREAS

14.0 Excavations Within RPA's - Services/Drainage/Level Changes etc.

- 14.1 Details of proposed drainage runs/services have not been finalised at this stage, these are to be designed to avoid the specified Root Protection Areas of retained trees. Adequate space is available on site for this to be achieved without conflict with retained trees. It is expected that such details can be approved under conditions attached to any planning approval granted.
- 14.2 No trenching or excavations are to be carried out within the specified Root Protection Areas of retained trees without prior arboricultural consultation. Root damage associated with trenching or excavations may result in the reduced longevity of trees or trees being left in an unsafe condition.
- 14.3 Particular care is required to ensure that any tree roots of 25mm diameter or greater are not severed or damaged without first seeking arboricultural advice. Should such roots be encountered, the works are to be stopped and further advice is to be sought from the arboricultural advisor or LPA tree officer prior to continuing.

TREE WORK REQUIRED TO ACCOMMODATE THE SCHEME

15.0 Required Tree Works

15.1 Table 3 provides details of the tree work required to accommodate the proposal.

Table 3: Proposed Tree Work

Tree No.	Schedule of Works
T36, T37, T38 G6, G7, G15 Part of G12*	Fell and grind/grub-out stumps.

*Those trees within 12 x stem diameter of the proposed driveway are to be removed to accommodate the driveway.

- 15.2 The specified tree works are considered to be required to accommodate the proposed development. Should detailed planning approval be granted it will be assumed, unless the LPA informs otherwise, that the tree works detailed at Table 3 may be carried out under the planning approval without any additional notification of intent or application for tree works.
- 15.3 All tree work is to be carried out prior to the commencement of any site clearance/development operations on the site.
- 15.4 The tree work is to be carried out by a competent arborist in accordance with the British Standard for tree work BS3998: 2010 'Recommendations for Tree Work'.
- 15.5 Upon completion of the specified tree work, the prescribed tree protection measures are to be installed as detailed on the Tree Protection Plan at Appendix B.

Appendix A

Tree Survey Data & Plan

Tree Survey Key

Tree No.	Tree Number - cross-referenced with tree numbers shown on Tree Survey Plan.		
Hgt (m)	Height - estimated in metres.		
Dia. at 1.5m (mm)	Stem Diameter - in millimetres taken at 1.5m above highest adjacent ground level		
No. of Stems	Number of main stems arising from below 1.5m above ground level. M = Multi-stemmed tree.		
Crown Spread N,E,S,W (m)	Given as a radial measurement in metres from the centre of the stem to the extremity of the canopy at the four main compass points NESW.		
Crown Cl/nce (m)	Crown Clearance - Height in metres of crown above adjacent ground level.		
Age Class	Y	Young	Staked or recently established tree at the fast growing early stage of establishment.
	SM	Semi mature	An established tree at a stage of rapid growth with increasing future growth potential
	M	Mature	A tree that is at a stage of constant growth nearing ultimate canopy size.
	V	Veteran	A mature tree, often of great ecological or heritage importance, that has reached a stage of natural decline.
Physiological Condition	Provides some evidence of the general well being of the tree. Assessed by comparison of growth characteristics with similar species in the locality and/or from personal experience.		
	Given in four classifications:		
	G	Good	
	F	Fair	
	P	Poor	
	D	Dead	

Preliminary Mgt	Recommendations for tree work to bring the trees to an acceptable and safe standard in context with the current site use.
Category	Category of quality assessment allocated to a tree derived from an individuals potential contribution to a site: considering tree health, condition, age and value. Full description given on Table 1 of BS5837:2012 'Trees in Relation to Demolition, Design and Construction'. Trees are colour coded on the attached Tree Survey plan. Given in four categories: A - Green - Trees of high quality and value (likely to contribute a further 40+ years) B - Blue - Trees of moderate quality and value (likely to contribute a further 20-40 years) C - Grey - Trees of low quality and value (likely to contribute a further 10-20 years) U - Red - Trees which may require removal on health and safety grounds, be in decline, infected by significant pathogens or, due to their current condition would lose their existing value within 10 years. A provisional category may be allocated pending further advised inspection/tree work.
RPD (m)	Root Protection Distance - The distance in metres of the radius of a circle depicting the root protection area required for an individual tree.
RPA (m)	Root Protection Area – The total area of ground to be protected around an individual tree.
(p)	Provisional quality assessment category – the highest expected category is allocated to the tree based on an incomplete preliminary visual inspection due to limited access ie. ivy clad, basal growth, dense undergrowth or off-site tree.
(e)	Estimated figure due to obstruction such as ivy or off-site tree.

Tree Survey Data

TREE NO	SPECIES	HEIGHT (m)	DIAMETER AT 1.5m or arf (mm)	NO. OF STEMS	CROWN SPREAD N,E,S,W (m)				CROWN CL/NCE (m)	AGE CLASS	PHYSIOLOGICAL CONDITION	STRUCTURAL CONDITION	PRELIMINARY MGT RECOMMENDATIONS	ESTIMATED REMAINING CONTRIBUTION	CATEGORY	RPD (m)	RPA (m2)	NOTES
T1	P.Laurel	4	200 200 180	3	2	2	2	2	2	Mature	Good	Good		20-40	C1	4.0	51	Trimmed
T2	Medlar	3	130 90 90	3	1.5	1.5	1.5	1.5	2	Semi- mature	Good	Good		20-40	C1	2.2	15	Trimmed
T3	Sumach	4	110 110	2	1	3	5	2	1	Mature	Fair	Fair		10-20	C1	1.9	11	
T4	Silver Birch	5	120	1	2	2	2	1	2	Young	Good	Good		>40	C1	1.4	7	
G1	Leyland x 3	7	<400	1	3.5	3.5	3.5	3.5	2	Semi- mature	Good	Good		20-40	C2	4.8	72	Topped and trimmed
G2	Lawson/ Leyland	8 to 10	<450	1	3	3	3	3	3	Semi- mature	Good	Good		20-40	C2	5.4	92	Off- site
G3	Leyland x 2	6	<500	1	2	2	2	2	0	Semi- mature	Good	Good		20-40	C2	6.0	113	Topped and trimmed
T5	Apple	3	200 150 130	3	2.5	2.5	2.5	2.5	2	Mature	Good	Fair		10-20	C1	3.4	36	Stem decay
T6	Prunus	2	300	1	1	1	1	1	1	Mature	Poor	Poor		< 10	U	3.6	41	2m suckering stump
T7	Prunus	5	250e	1	2	4	2	4	2	Mature	Poor	Poor		< 10	U	3.0	28	Decayed stem and branches
T8	Norway Maple	14	660	1	5	7	7	7	3	Mature	Good	Fair		20-40	B1	7.9	197	Purple leaf variety, crown break at 1.7m,included bark.

TREE NO	SPECIES	HEIGHT (m)	DIAMETER AT 1.5m or arf (mm)	NO. OF STEMS	CROWN SPREAD N,E,S,W (m)				CROWN CL/NCE (m)	AGE CLASS	PHYSIOLOGICAL CONDITION	STRUCTURAL CONDITION	PRELIMINARY MGT RECOMMENDATIONS	ESTIMATED REMAINING CONTRIBUTION	CATEGORY	RPD (m)	RPA (m2)	NOTES
G4	Leyland Cypress	3.5	<300	1	2	2	2	2	0	Semi-mature	Good	Good		20-40	C2	3.6	41	Hedge
T9	Malus	3	140	1	1.5	1.5	1.5	1.5	2	Young	Good	Good		>40	C1	1.7	9	
T10	Eucalyptus	12	460	1	6	5	3	4	2	Semi-mature	Good	Good		>40	B1	5.5	96	
T11	Sumach	3	110	1	4	1	0	4	1.5	Semi-mature	Good	Fair		10-20	C1	1.3	6	
T12	Macrocarpa	14	810	1	5	5	5	5	3	Semi-mature	Fair	Fair		20-40	B1	9.7	297	Dieback, reduced.
T13	Purple Plum	5	300	1	2	3	2	4	2	Mature	Poor	Poor		< 10	U	3.6	41	Decay stem.
T14	Leyland Cypress	12	410	1	1	3	3	3	2	Semi-mature	Fair	Good		< 10	U	4.9	76	Topped, dieback.
T15	Malus	4	160 210	2	3	4.5	3	1	2	Mature	Fair	Fair		10-20	C1	3.2	32	
T16	Laurel	4	150 200 180	3	3	2	4	5.5	2	Mature	Good	Good		10-20	C1	3.7	43	Topped and trimmed.
T17	Cherry	12	300 400	2	4	3	3	5	2	Mature	Fair	Poor	Fell	< 10	U	6.0	113	Decayed stem.
G5	Mixed Species	5 to 10	<350	1	3	3	3	3	2	Semi-mature	Good	Good		>40	C2	4.2	55	
T18	Leyland	20	490	1	3	3	3	3	2	Semi-mature	Good	Good		>40	C1	5.9	109	

TREE NO	SPECIES	HEIGHT (m)	DIAMETER AT 1.5m or arf (mm)	NO. OF STEMS	CROWN SPREAD N,E,S,W (m)				CROWN CL/NCE (m)	AGE CLASS	PHYSIOLOGICAL CONDITION	STRUCTURAL CONDITION	PRELIMINARY MGT RECOMMENDATIONS	ESTIMATED REMAINING CONTRIBUTION	CATEGORY	RPD (m)	RPA (m2)	NOTES
T19	Laurel	5	200 120 220	3	3	3	3	3	2	Mature	Good	Good		10-20	C1	3.9	47	
G6	Holly	8	220 220 180 150	4	2	2	2	2	2	Semi-mature	Good	Good		20-40	C2	5.0	77	Largest recorded.
G7	Mixed Species	6	<300	M	3	3	3	3	2	Mature	Good	Good		10-20	C2	3.6	41	Shrubs.
T20	Copper Beech	25	1200	1	8	10	11	10	2.5	Mature	Good	Good		>40	A1	15.0	707	
T21	Copper Beech	20	970	1	10	10	10	10	3	Mature	Fair	Good		>40	A1	11.6	426	Reduced vigour.
G8	Mixed Species	5 to 10	<300	1	3	3	3	3	2	Semi-mature	Fair	Good		>40	C2	3.6	41	
T22	Beech	20	1160	1	12	7	10	9	3	Mature	Fair	Fair (p)	Assess	20-40 (p)	B1 (p)	15.0	707	Suppressed to E by removed tree, 40% dysfunction @ base, reduced vigour to E, dieback.
T23	Lime	25	900	1	8	8	8	8	3	Mature	Good	Good		>40	A1	10.8	366	
T24	Holly	6	230 230	2	4	4	4	4	3	Semi-mature	Good	Good		>40	C1	3.9	48	
T25	Leyland Cypress	13	350	1	4	4	4	4	3	Semi-mature	Good	Fair		20-40	C1	4.2	55	
G9	Sycamore	15	460	1	4	4	4	4	3	Semi-mature	Fair	Poor		10-20	C1	5.5	96	Stem wound and decay.

TREE NO	SPECIES	HEIGHT (m)	DIAMETER AT 1.5m or arf (mm)	NO. OF STEMS	CROWN SPREAD N,E,S,W (m)				CROWN CL/NCE (m)	AGE CLASS	PHYSIOLOGICAL CONDITION	STRUCTURAL CONDITION	PRELIMINARY MGT RECOMMENDATIONS	ESTIMATED REMAINING CONTRIBUTION	CATEGORY	RPD (m)	RPA (m2)	NOTES
T26	Leyland Cypress	9	180	1	2.5	2.5	2.5	2.5	2	Semi-mature	Good	Good		>40	C1	2.2	15	
T27	Sycamore	16	480 320 390	3	7	7	7	7	3	Semi-mature	Good	Fair		>40	B1	8.4	219	
T28	Macrocarpa	12	810	1	9	9	6	4	3.5	Mature	Good	Fair		20-40	C1/B1	9.7	297	Topped at 5m.
T29	Yew	10	220 280	2	3	3	3	3	2	Semi-mature	Good	Good		>40	B1	4.3	57	
G10	Sycamore x 2	18	<600	1	8	8	8	8	3	Semi-mature	Good	Fair		20-40	B2	7.2	163	1 x bifurcated at 1.5m, 1 x bifurcated at 2.5m, poor form.
T30	Pear	5	260	1	4	3	3	4	2.5	Mature	Fair	Fair		10-20	C1	3.1	31	
T31	Prunus	5	<150	M	5	3	3	5	2.5	Mature	Fair	Fair		10-20	C1	1.8	10	
G11	Mixed Species	14	<400	1	6	6	6	6	3	Semi-mature	Good	Good		>40	B2	4.8	72	
T32	Sycamore	13	460	1	6	6	6	6	2	Semi-mature	Good	Good		>40	B1	5.5	96	
T33	Sycamore	14	550 380	2	9	9	9	9	3	Semi-mature	Good	Fair		20-40	B1	8.0	203	Poor form.
T34	Sycamore	13	610	1	6	6	6	6	2	Semi-mature	Good	Fair		20-40	B1	7.3	168	Stem divides at 2m with included bark.
T35	Sycamore	15	580	1	6	6	6	6	2	Semi-mature	Good	Fair		20-40	B1	7.0	152	Historically topped at 5m

TREE NO	SPECIES	HEIGHT (m)	DIAMETER AT 1.5m or arf (mm)	NO. OF STEMS	CROWN SPREAD N,E,S,W (m)				CROWN CL/NCE (m)	AGE CLASS	PHYSIOLOGICAL CONDITION	STRUCTURAL CONDITION	PRELIMINARY MGT RECOMMENDATIONS	ESTIMATED REMAINING CONTRIBUTION	CATEGORY	RPD (m)	RPA (m2)	NOTES
G12	Mixed Species	5 to 10	<400	M	2	2	2	2	1.5	Semi-mature	Good	Good		10-20	C2	4.8	72	All semi-mature with 1 x mature Holly.
T36	Hawthorn	5	300	1	2.5	2.5	2.5	2.5	1.5	Mature	Good	Good		10-20	C1	3.6	41	
T37	Yew	9	240 180 350 150	4	4.5	5	6	5	1	Semi-Mature	Good	Good		>40	B1	5.8	106	
T38	Holly	5	<300	3	2	2	2	2	2	Mature	Poor	Poor	Fell	< 10	U	3.6	41	
T39	Cherry	5	600e	1	3	3	3	3	2	Mature	Poor	Poor	Fell	< 10	U	7.2	163	
G13	Apple x 5	4	<300	1	3.5	3.5	3.5	3.5	3	Mature	Good	Good		20-40	C2	3.6	41	
G14	Mixed Ornamentals	5-6	<400	1	2	2	2	2	2	Mature	Good	Good		20-40	C2	4.8	72	Topped and trimmed
G15	Leyland Cypress x 2	4	<300	1	1.5	1.5	1.5	1.5	0	Semi-mature	Good	Good		20-40	C2	3.6	41	Topped and trimmed.

Table 1 (BS5837:2012) – Cascade Chart for Tree Quality Assessment.

Category & Definition		Criteria (Including subcategories where appropriate)			Identification On Plan
TREES UNSUITABLE FOR RETENTION (See Note)					
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 category U 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; see 4.5.7.				DARK RED
TREES TO BE CONSIDERED FOR RETENTION					
Category & Definition	Criteria — Subcategories				
	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 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 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 the high category, 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 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	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 B

Tree Protection Measures

- Tree Protection Plan -**
- Tree Protection Warning Sign -**

Principles of Tree Protection

- i) The majority of damage to tree root systems on development sites occurs either at the early stages of development when protection measures have not been installed promptly enough, or at the final stages of development when protective fencing is taken down prematurely.
- ii) The tree protection measures described are to be installed prior to the commencement of any other works associated with the proposal.
- iii) The site manager is to be made aware of their responsibility to ensure tree protection measures are maintained throughout the development of the site.

General Precautions

- No materials that are likely to have an adverse effect on tree health such as oil, bitumen or cement will be stored or discharged on unsealed surfaces within 10 metres of the trunk of a retained tree. Consideration for the slope of the ground is to be considered when discharging or storing materials that are potentially harmful to trees.
- No fires to be lit where flames could extend to within 5m of foliage, branches or trunks of trees.
- No signs, cables or other items are to be attached to trees.
- Details of service runs have not been provided. Service runs are to avoid Root Protection Areas and will ideally be laid within one combined trench.
- Any proposed trenching, excavations, level changes within Root Protection Areas are to be approved by the Local Authority Tree Officer prior to work being carried out.
- Should tree roots over 25mm in diameter be encountered whilst carrying out any excavations within the vicinity of retained trees, advice from the arboricultural advisor or LPA tree officer is to be sought prior to continuing with works.



**PROTECTIVE FENCING. THIS
FENCING MUST BE
MAINTAINED IN ACCORDANCE
WITH THE APPROVED PLANS
AND DRAWINGS FOR THIS
DEVELOPMENT.**



**TREE PROTECTION AREA
KEEP OUT !**
(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY
PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A
TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY
LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE
WITH THE WRITTEN PERMISSION OF THE LOCAL
PLANNING AUTHORITY

!KEEP OUT!

Protected Trees

No Contractor Access Without Local Authority Permission

**REPORT ANY DAMAGE
TO TREES OR FENCING IMMEDIATELY TO
GRAVESHAM BC TREE OFFICER
Tel: 01474 337000**



**Sylvanarb Arboricultural Consultants
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