



**KEY**

T1	Tree/Group number	●	Tree position with canopy spread plus BS5837 category C1, C2 or C3	○	Root Protection Area (RPA) adjusted as per BS5837:2012
●	Tree position with canopy spread plus BS5837 category A1, A2 or A3	●	Tree position with canopy spread plus BS5837 category U	○	Projected tree shade as per BS5837:2012
●	Tree position with canopy spread plus BS5837 category B1, B2 or B3	○	Tree or group to be removed		

**Arboricultural Impact Assessment**

The following potential impacts have been identified with regard to the proposed construction of a new storage building within close proximity to significant trees at the Visitors Centre, Sandringham Estate (see associated annotation points adjacent):

- 4. The proposed development necessitates the removal of the Sycamores T22, T24, T25 and T26 to allow the construction of the storage structure. T24 directly conflicts with the footprint of the building while T22, T25 and T26 would be located within approximately a metre of it. The removal of these proximal trees is required due to the challenge of installing screw piles at this proximity (this is within the densest portion of the rootplate where structural rooting begins to transition to the wider system and the likelihood of mechanical injury to roots is highest) and also because it is considered that future management would inevitably include ongoing clearance pruning of these trees. Although all four trees are designated BS5837 category B2, given the scale and longevity of the surrounding tree population and the enclosed nature of the staff parking area (there are few longer views from publically accessible areas that include the trees as anything more than secondary components) it is not considered that their removal will detrimentally affect the amenity of the site or its surroundings.
- 5. The northern corner of the proposed structure will be supported on screw piles within the Root Protection Area (RPA) of the large category A Corsican Pine T21. As the vast majority of tree roots normally occupy the upper 600mm of normal soil (with a typical bias to the uppermost layers within that depth) any disturbance of the existing ground within the RPA has the potential to cause damage to roots. However, at this distance (<math>7.5m</math>), it is considered extremely unlikely that screw pile installation will result in significant harm to roots and therefore the effect upon T21 is considered to be negligible.
- 6. As with all developments that retain trees the increased intensity and range of development traffic increases the likelihood of direct impact damage from vehicles or machinery to stems or branches. Damage can provide an entry point for pathogens and curtail the safe useful life expectancy of retained trees as well as damaging their visual amenity value. Provided mitigation measures such as tree protection barriers and ground protection sheeting are correctly implemented, the overall impact to individual trees is likely to be minimal and consequently the visual impact on the wider landscape is not considered to be likely to be significant.

**Recommendations:**

To address these conflicts it is proposed that:

1. Those parts of the retained trees that extend into the site area to be protected using appropriate barriers to be installed at the limit of the RPA or canopy extents (whichever is greater). Where access requirements provide the creation of a construction exclusion zone across the entire RPA, appropriate ground protection must be installed contiguous with the barriers to the extent of RPAs and any stem cladding or necessary access facilitation canopy pruning must be specified with all pruning undertaken by an appropriately competent and qualified Arborist prior to commencement. These measures must be maintained for the duration of the construction to mitigate and limit the impact of the movements of vehicles, pedestrians and materials around the trees.
2. The detail, sequence and approach of any necessary facilitation pruning, tree protection, demolition and construction (including excavation and resurfacing), landscaping and site inspections must be the subject of a site specific method statement and associated dimensioned tree protection plan.

**Tree Survey Schedule (undertaken on 31.12.2021 by TS)**

An explanation of the survey terms and assessment limitations can be found at [www.ravencrofttrees.co.uk/wp-content/uploads/2019/04/Schedule-Key2019.pdf](http://www.ravencrofttrees.co.uk/wp-content/uploads/2019/04/Schedule-Key2019.pdf) and the general constraints and limitation of this survey and assessment can be found at [www.ravencrofttrees.co.uk/consultancy/terms-and-conditions/](http://www.ravencrofttrees.co.uk/consultancy/terms-and-conditions/)

Tree ID	Common Name	Botanical Name	Height (m)	Calc. / Actual Stem Dia. (mm)	Spread (m)			Height (m) & Orientation of First Significant Branch	Avg. Canopy Height (m)	Life Stage	General Observations	Preliminary Recommendations	Estimated Remaining Contribution (Years)	BS5837: 2012 Category	RPA Radius (m)	RPA m²	
					N	E	S										
T1	Scots Pine	Pinus sylvestris	25	710	6	4	5	3	18 - N	18	Mature	No significant visible defects.	No work at this time.	40 + Years	A2	8.5	228
T2	Sycamore	Acer pseudoplatanus	17	470	6	8	6	5	4 - E	2	Semi-mature	Minor cavity from old second stem at 1m to south. No significant visible defects.	No work at this time.	40 + Years	B2	5.6	100
T3	Scots Pine	Pinus sylvestris	22	400	4	3	1	1.5	10 - E	15	Semi-mature	No significant visible defects.	No work at this time.	40 + Years	B2	4.8	72
T4	Beech	Fagus sylvatica	4	90	1.5	1	1.5	1.5	1 - N	1	Young	No significant visible defects.	No work at this time.	40 + Years	C2	1.1	4
T5	Scots Pine	Pinus sylvestris	21	600	4	2	3.5	2	16 - E	15	Mature	No significant visible defects.	No work at this time.	40 + Years	B2	7.2	163
T6	Scots Pine	Pinus sylvestris	23	620	4.5	3.5	5	3	19 - N	19	Mature	No significant visible defects.	No work at this time.	40 + Years	A2	7.4	174
T7	Scots Pine	Pinus sylvestris	23	610	3	6	3.5	2.5	16 - E	17	Mature	No significant visible defects.	No work at this time.	40 + Years	A2	7.3	168
T8	Scots Pine	Pinus sylvestris	19	640	3	7	6.5	4	8 - S	15	Mature	Southern branch dead with main stem occluding branch base. No significant visible defects.	No work at this time.	40 + Years	B2	7.7	185
T9	Sycamore	Acer pseudoplatanus	16	610	5	7.2	8	5	2 - W	2.5	Semi-mature	No significant visible defects.	No work at this time.	40 + Years	B2	7.3	168
T10	Silver Birch	Betula pendula	18	410	2.5	2.5	2.5	2.5	13 - S	15	Semi-mature	Lowest major branch to south dead. No significant visible defects.	No work at this time.	40 + Years	B2	4.9	76
T11	Scots Pine	Pinus sylvestris	21	650	4	4	5.5	6	15 - S	15	Mature	No significant visible defects.	No work at this time.	40 + Years	A2	7.8	191
T12	Grand Fir	Abies grandis	22	540	4	4	4	4	2 - S	2	Mature	No significant visible defects.	No work at this time.	40 + Years	B2	6.5	132
T13	Grand Fir	Abies grandis	21	390	2.5	2.5	2.5	2.5	2 - S	2	Mature	No significant visible defects.	No work at this time.	40 + Years	B2	4.7	69
T14	Silver Birch	Betula pendula	18	410	3	4	3.5	3.5	8 - W	8	Semi-mature	No significant visible defects.	No work at this time.	40 + Years	B2	4.9	76
T15	Norway Spruce	Picea abies f. pendula	16	260	2.5	2.5	2.5	2.5	2.5 - S	1.5	Young	No significant visible defects.	No work at this time.	20 + Years	C2	3.1	31
T16	Norway Maple	Acer platanoides	19	650	8	9	6	7	4 - E	3	Mature	No significant visible defects.	No work at this time.	40 + Years	A2	7.8	191
T17	Sycamore	Acer pseudoplatanus	17	560	6	6	7	8	2 - E	3	Mature	No significant visible defects.	No work at this time.	40 + Years	B2	6.7	142
T18	Scots Pine	Pinus sylvestris	24	750	6	8	3.5	3	12 - E	5	Semi-mature	No significant visible defects.	No work at this time.	40 + Years	A2	9.0	255
T19	Silver Birch	Betula pendula	17	340	4	3	3	2.5	4 - E	3	Semi-mature	No significant visible defects.	No work at this time.	40 + Years	C2	4.1	52
T20	Silver Birch	Betula pendula	15	250	2	3	3	2.5	1.5 - S	1.5	Semi-mature	No significant visible defects.	No work at this time.	40 + Years	C2	3.0	28
T21	Corsican Pine	Pinus nigra subsp. laricio	28	1150	7	8	9	7.5	8 - S	6	Mature	No significant visible defects.	No work at this time.	40 + Years	A1:2	13.8	598
T22	Sycamore	Acer pseudoplatanus	18	720	7.5	7.5	10	8	2.5 - S	4	Mature	Minor branch stub cavity to west. No significant visible defects.	Fell to facilitate development. Grind stump to 200mm below existing grade and backfill with topsoil.	40 + Years	B2	8.6	235
T23	Sycamore	Acer pseudoplatanus	15	330	4	3	4	3.5	4 - S	3.5	Young	No significant visible defects.	No work at this time.	40 + Years	C2	3.9	49
T24	Sycamore	Acer pseudoplatanus	13	470	5	6	5	5	4 - S	4	Semi-mature	No significant visible defects.	Fell to facilitate development. Grind stump to 200mm below existing grade and backfill with topsoil.	40 + Years	C2	5.6	100
T25	Sycamore	Acer pseudoplatanus	15	540	5	7	6	8	4 - S	4	Semi-mature	No significant visible defects.	Fell to facilitate development. Grind stump to 200mm below existing grade and backfill with topsoil.	40 + Years	B2	6.5	132
T26	Sycamore	Acer pseudoplatanus	18	550	4	6.5	5	5	2 - S	2.5	Semi-mature	Minor basal cavity to south. No significant visible defects.	Fell to facilitate development. Grind stump to 200mm below existing grade and backfill with topsoil.	40 + Years	B2	6.6	137
T27	Sycamore	Acer pseudoplatanus	20	660	7.5	6.5	4.5	7.5	4 - N	3	Mature	Wide cup shaped union between two main stems. No significant visible defects.	No work at this time.	40 + Years	B2	7.9	197
T28	Sycamore	Acer pseudoplatanus	15	510	7.5	6	5.5	3.5	5 - E	4	Semi-mature	No significant visible defects.	No work at this time.	40 + Years	B2	6.1	118
G1a-b	Hazel	Corylus avellana	4	70	3	2	3	2	0.5 - S	0.5	Semi-mature	No significant visible defects.	No work at this time.	40 + Years	C2	0.8	2
G2a-q	Cherry Laurel	Prunus laurocerasus	5	150	3	3	3	3	0.5 - E	0.5	Semi-mature	No significant visible defects.	No work at this time.	20 + Years	C2	1.8	10

**Arboricultural Impact Assessment**

PROJECT	Sandringham Stores, Visitors Centre, Sandringham Estate
TITLE	Arboricultural Impact Assessment
SCALE	1:125 @ A1
DATE	14.03.2022
PROJECT NUMBER	LIV/SANDSTRS/AIA/01
DRAWN BY	TS
CHECKED	N/A
DRAWING NUMBER	110122/02

**RAVENCROFT ARBORICULTURAL SERVICES**

6 Riepham Road, Foulsham Dereham, Norfolk NR23 5SL, Company Registration No. 4936062 (registered in England)

Tel/Fax: 01362 684291 Email: [tony@ravencrofttrees.co.uk](mailto:tony@ravencrofttrees.co.uk)

NOT TO BE SCALED FROM ALL DIMENSIONS TO BE CHECKED. THE ORIGINAL OF THIS DRAWING MUST BE PRODUCED IN COLOUR UNLESS OTHERWISE SPECIFIED AND MUST BE REPRODUCED BY RAVENCROFT ARBORICULTURAL SERVICES AS A TRADING NAME OF RAVENCROFT TREES SERVICES LTD. UNLESS OTHERWISE STATED. © 2022 RAVENCROFT TREES SERVICES LTD.