

**ARBORICULTURAL SURVEY
FOR A PROPOSED MIXED-USE DEVELOPMENT AT
MARRIOTT'S PARK, TAVERHAM, NORFOLK, NR8 6HL**

Prepared For

M Scott Properties Ltd
Suite 5
Oyster House
Severalls Lane
Colchester
Essex
CO4 9PD

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ADDRESS

Brightwell Barns, Ipswich Road, Brightwell, Suffolk, IP10 0BJ

TELEPHONE

01603 298 076

FAX

01603 298 075

WEBSITE

www.geosphere-environmental.co.uk

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Prepared by:	Richard Fenna	Date:	04 December 2018
	Arboricultural and Ecological Consultant		
Reviewed and Authorised by:	Katie Linehan	Date:	04 December 2018
	Technical Director		

Prepared by: Geosphere Environmental Ltd, Brightwell Barns, Ipswich Road, Brightwell, Suffolk, IP10 0BJ. Telephone (01603) 298076. www.geosphere-environmental.co.uk

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REVISION RECORD

Revision	Date	Document	Prepared By:	Admin
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AMENDMENT RECORD

Revision	Date	Amendments
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EXECUTIVE SUMMARY

Report Description	<p>Geosphere Environmental Limited was commissioned by M Scott Properties Ltd, to undertake an arboricultural survey of Marriott's Park, Taverham, Norfolk, NR8 6HL.</p> <p>The site is located at National Grid Reference (NGR) TG 1677 1547. The report relates to the assumed redevelopment of the site for residential use. At present a development plan has not been finalised for the scheme</p> <p>The site covers an area of approximately 65.6 hectares (ha). This and the immediate surrounding area were surveyed.</p>
Summary of Main Findings	<p>The Tree Constraints Plan Drawing ref. 3551,EC,AR,DS/002/Rev 0 in Appendix 6, shows the locations of all the trees surveyed with the canopy and root protection area plotted on the plan.</p> <p>A total of 29 trees and 23 groups of trees were surveyed.</p> <p>Eighteen trees and 8 groups of trees were classed as category A trees. Seven trees and 13 groups of trees were classified as category B trees. Four trees and 2 groups of trees were classified as category C trees. No trees were categorised as category U trees.</p> <p>The BGS digital mapping indicated that the site comprised of a bedrock layer of Chalk with a recorded superficial layer of Sheringham Cliffs Formation (Sand and Gravel).</p> <p>It is advisable to contact the local authority regarding Tree Preservation Orders and Conservation Areas before any tree works are carried out, to determine if any protection is in place on site.</p>
Preliminary Impact Assessment	<p>It is anticipated that the existing hedgerows and trees will be retained within the proposed development. Small sections of the hedgerows will need to be removed to construct roads through the site. The roads should be designed to avoid the trees with sections of shrubby hedgerow removed in preference to trees.</p> <p>The trees along Marriott's Way should all be retained. There are gaps between the trees where existing farm tracks cross Marriott's Way. These gaps could be used to construct new roads if required.</p> <p>The hedgerows along Breck farm lane are of poor quality, and could be removed and replaced, to allow Breck farm lane to be widened, however the junction between Kingswood avenue and Breck farm lane, is heavily constrained by trees, as such widening the road near the junction would likely impact the trees.</p>
Recommendations	<p>The Tree Constraints Plan should be consulted to ensure that the constraints posed by the trees are taken into account when designing the proposed development. For example, retained trees could be incorporated within the proposed public open space.</p> <p>It is not known if there are Tree Preservation Orders present on site. It is advisable to contact the local authority regarding Tree Preservation Orders and Conservation Areas before any tree works are carried out.</p>

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1. INTRODUCTION

1.1 General

Geosphere Environmental Limited was commissioned by M Scott Properties Ltd, to undertake an Arboricultural Survey of the site at Marriotts Park, Taverham, Norfolk, NR8 6HL. Any limitations and conditions pertaining to the report are stated within Appendix 1, with a full list of technical references provided within Appendix 2.

A survey of the wider area was undertaken, this report relates specifically to an area of land, adjacent to the Marriott's way bridleway. The site covers an approximate area of 65.6 hectares (ha) and is located at National Grid reference TG 1677 1547.

The site location is shown on Figure 1 below:



Figure 1 –The site location is outlined in red.

1.2 Aims

This report has been prepared to support a planning application and provides baseline data for an arboricultural assessment of the site and identifies the tree constraints and root protection areas of trees on or near the site which may be affected by future development.

2. TECHNICAL APPROACH

2.1 Arboricultural Survey

The arboricultural survey has been undertaken in general accordance with BS 5837:2012 (ref. **R.1**). The recommendations for tree remediation works are in accordance with current legislation and guidance, including BS 3998: 2010 Tree work- Recommendations (ref. **R.2**).

The data collected during this survey is based entirely upon arboricultural grounds and reflects the condition of the trees on the day the survey was undertaken. The locations of the trees were detailed on a topographical survey provided by the client. All locations of trees are assumed to be correct. Any trees not noted on the topographical plan have been added where appropriate during the tree survey.

Scientific names and common names of plant species identified are as they appear in Stace (ref. **R.3**). For species not listed in Stace, scientific and common names were taken from Johnson and More (ref. **R.4**).

2.2 Soil Assessment

A desk-based assessment of the soil was undertaken to determine potential for volume changing soils on site, using BGS mapping (ref. **R.5**).

2.3 Site Specific Limitations

Trees were surveyed without undertaking vegetation clearance. Some trees were covered with ivy, within hedgerows or obscured by other vegetation which limited the visibility of the stem size and structure. In cases where the trees were obscured or inaccessible, the parameters which could not be accurately measured were estimated as per BS 5837: 2012 (ref. **R.1**).

3. TREE SURVEY

The survey was undertaken by an experienced surveyor from Geosphere Environmental Ltd on 14 November 2018 to record data relevant to the assessment of the trees on and adjacent to the site.

3.1 Site Description

The site is formed of arable fields, on the edge of the urban development of Draydon. Marriott's Way, and a farm track pass through the site. The site also appears well used by dog walkers throughout the filed margins, although no public rights of way appear to be present in these areas. The trees on site are all located within the existing field boundaries, hedgerows, and around the site boundary.

3.2 Tree Survey Results

The results of the tree survey are shown within the Tree Survey Schedule in Appendix 3. A full description of the surveyed parameters is included in the Survey Schedule Descriptions in Appendix 4. A key to the scientific names used is attached within Appendix 5. The results are summarised below:

- A total of twenty-nine trees and twenty-three groups of trees were surveyed.
- Eighteen trees and eight groups of trees were classed as Category A trees. This is the highest classification available under BS 5837:2012. These trees are of high quality and confer particular visual importance on the landscape. These trees are likely to be required to be protected during the development.
- Seven trees and thirteen groups of trees were classified as Category B trees. These trees are of moderate quality and confer considerable importance on the landscape. These trees should be retained where possible during development.
- Four trees and two groups of trees were classified as Category C trees. These trees are of low quality and confer lower levels of benefits to the landscape. The local authority may find it acceptable to remove these trees during development.
- No trees were categorised as Category U trees.

3.3 Tree Constraints Plan

A Tree Constraints Plan Drawing referenced 3551,EC,AR,DS/002/Rev 0 has been prepared for the site and is attached within Appendix 6.

The Tree Constraints Plan describes the constraints that the trees may place on the development. The tree canopy and root protection area have been calculated using the stem diameter as per BS 5837:2012 (ref. R.1).

3.4 Soil Assessment

The BGS digital mapping (ref. R.5) indicated that the site comprised of a bedrock layer of Chalk with a recorded superficial layer of Sheringham Cliffs Formation (Sand and Gravel). A further site investigation should be undertaken to confirm the findings of the BGS digital maps.

In order to minimise the risk, foundations should be designed in accordance to NHBC Standards Chapter 4.2 Building near Trees, (ref. **R.6**).

3.5 Permissions and Council Restrictions

It is not known if there are Tree Preservation Orders present on site. It is advisable to contact the local authority regarding Tree Preservation Orders and Conservation Areas before any tree works are carried out.

4. PRELIMINARY ARBORICULTURAL IMPACT ASSESSMENT

4.1 Proposed Development

A proposed development has not yet been designed for the scheme, however, it is anticipated that the proposed development will comprise of residential development with proposed access roads. A community centre, and commercial space will also be included. The existing hedgerows and trees are planned to be retained, with residential neighbourhoods designed to fit within the existing arable fields. Small sections of hedgerow will have to be removed to allow the construction of the access roads.

4.2 Anticipated impacts and options for avoidance

There are large category A trees located within hedgerows throughout the site, which should be retained within the proposed development. Where it is required to remove sections of hedgerows, the trees and root protection areas should be retained, in preference to sections of shrubby hedgerow. For example, to create an access along the western boundary, an access can be created between T7 and T8, removing sections of G5 (the hedge). In the eastern area, there is a hedgerow across the site, here G25 and T42 are large category A trees, which should be retained, to avoid these trees, the access point can be created through G26.

The trees which line Marriott's Way (G21) are also considered category A trees. There are two existing tracks which pass through the line of trees. Any new roads or service runs should be designed to use these existing access points to avoid further impact to the trees. Of the trees along Marriott's Way, the most important trees have been recorded as G22, located to the south of Marriott's way. The proposals should be designed to avoid work within the root protection areas of these trees.

Breck Farm Lane enters the site from the south. This lane is narrow, with trees lining the lane (G15 and T34). It will be difficult to widen the junction with Kingswood Avenue and entrance of the road, without impacting or removing these trees. Further along the lane, the hedgerows (G16 and G1) are overrun with ivy and bramble, contains small dead elm trees and large gaps. If required, the hedgerows at this point could be re-located in order to widen the road.

4.3 Tree Management

Standard avoidance measures to reduce the impact of development on trees as required by BS 5837:2012, (ref. **R.1**), is simplified as follows for any development type:

- A Consultant Project Arboriculturalist should be appointed to oversee the arboricultural aspects of the development project.
- The Root Protection Areas and above ground structures for retained trees must be protected during construction work with barriers as prescribed by BS 5837:2012, (ref. **R.1**). The locations of barriers should be determined once a finalised development plan has been produced.
- Once the protection areas have been finalised and the protective barriers have been erected, then these areas are to be considered construction exclusion zones. Any work within these zones will need prior agreement with the Consultant Project Arboriculturalist.
- Changes to the shape of the canopy of retained trees must be agreed with the Consultant Project Arboriculturalist before any works are undertaken, however, all construction within the canopy extent

of a tree is best avoided to avoid potential damage to future buildings and to avoid recurring pruning regimes.

- Tree planting should form part of the soft landscaping on site to offset any trees which are removed during the development process. An appropriate after care scheme should be implemented to ensure the newly planted trees reach maturity.

4.3.1 Tree Pruning

The site contains a number of trees in various stages of maturity, containing deadwood and fungal infections, usual for trees of their age. Any hazards should be removed prior to the commencement of construction.

The canopies of the trees are likely to require pruning to accommodate new construction. Once the layout of the development area has been finalised, a tree management plan should be completed advising upon remedial action required for health and safety and facilitation pruning for construction needs.

All tree work is to be carried out in general accordance with BS 3998:2010 Tree work – Recommendations (ref. **R.2**) by a professional and specialist arboricultural contractor, who carries the appropriate experience and insurance cover.

Tree planting should form part of the soft landscaping on site to offset any trees which are removed during the development process.

4.3.2 Tree Planting

In order to mitigate the loss of sections of hedgerows and to provide enhancement to the existing trees on site, the hedgerows that are retained within the proposed development should be repaired and restocked with new trees, to fill in gaps and to create thicker, denser hedgerows. Planting of standard trees should also be included within the hedgerows, with the aim of creating a thick, shrubby hedge, containing mature trees.

Trees should be selected and planted following BS 8545:2014 Trees: From nursery to independence in the landscape – recommendations (ref. **R.7**).

New hedgerow planting should be protected with stock fencing, and appropriate tree guards, to protect the new planting from browsing mammals such as deer and rabbits. It should be expected that some trees will not survive after being planted, so trees should be replaced on a more than 1:1 basis, and an appropriate aftercare program should be put in place to ensure that any dead trees are replaced. Trees should be selectively thinned and formatively pruned where appropriate after the trees have established. Aftercare should also include mulching and irrigation.

5. RECOMMENDATIONS

The Tree Constraints Plan Drawing ref. 3551,EC/002/Rev 0 in Appendix 6 should be consulted, to ensure that the constraints posed by the trees are taken into account when designing the proposed development.

Further arboricultural planning is required once the proposed development plans have been finalised. The formal planning process with regards to trees will require the following additional information:

- A Tree Retention Plan should be designed once the layout of the development area has been finalised, and a final proposed development plan is available. This will show the locations of trees which will remain throughout the development works, and the trees which will be removed prior to the commencement of development.
- A Tree Protection Plan should be designed based upon the Tree Retention Plan. This will include finalised locations of protective barriers, construction exclusion zones and any other protection measures that trees will require prior to commencement of construction.
- An Arboricultural Impact Assessment, Arboricultural Method Statement, and Tree Management Plan should be supplied with the Tree Protection Plan. A Consultant Project Arboriculturalist should be appointed by the developer, to ensure all the arboricultural aspects of the redevelopment project are taken into account, from the planning stage onwards.

APPENDICES

APPENDIX 1 – REPORT LIMITATIONS AND CONDITIONS

This report was prepared only for our client and is not intended to be relied on by any other party.

The Executive Summary and Recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon until considered in the context of the whole report.

Interpretations and recommendations contained in the report represent our professional opinions, which were arrived at in accordance with currently accepted industry practices at the time of reporting and based on current legislation in force at that time.

This report is prepared and written in the context stated in the introduction to this report and should not be used in a differing context. Furthermore, new information, improved practices and legislation may necessitate an alteration to the report in whole or in part after its submission. Therefore, with any change in circumstances or after the expiry of one year from the date of the report, the report should be referred to us for re-assessment and, if necessary, re-appraisal.

The trees were not climbed but surveyed from ground level. The survey recorded any defects which were observed, but a full tree health and safety inspection for the site is beyond the scope of this survey.

Any physical changes that happen to the site after the tree survey was undertaken have the potential to invalidate or change the findings of this report. Therefore, the consultant shall not be responsible for any event that may happen after the survey was undertaken due to factors that were not apparent at the time.

Any hazards that were visible on the day of the survey have been noted in the tree management recommendations section of the Tree Survey Schedule (Appendix 3). However, this report should not be considered a substitute for a tree risk assessment or management plan, which would be required to minimize the risk and liability associated with the trees found on site.

APPENDIX 2 – REFERENCES

- R.1.** BSI (2012). BS 5837:2012 Trees in relation to design, demolition and constructions- Recommendations.
- R.2.** BSI (2010). BS 3998:2010 Trees work- Recommendations.
- R.3.** Stace, C. A. (2010). New Flora of the British Isles (third edition), Cambridge University Press.
- R.4.** Johnson and More (2006). Tree Guide, Harper Collins Publishers Ltd.
- R.5.** British Geological Survey (accessed 19 November 2018) Geology of Britain Viewer website: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>.
- R.6.** National House-Building Council, Standards, Chapter 4.2, 2003 'Building Near Trees'.
- R.7.** BSI (2014). BS 8545:2014 Trees: from nursery to independence in the landscape – Recommendations.

APPENDIX 3 – TREE SURVEY SCHEDULE

TREE SURVEY SCHEDULE

1	2	3	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	Species	Height (m)	Stem diameter (mm)	No. of Stems	Branch Spread (m)				First Branch Height (m)	Canopy Height (m)	Life Stage	Physiological Condition	Structural Condition	Tree Work Recommendations/ comments	Remaining Contribution (Years)	Category Grading	RPA (m ²)	RPA Radius (m)
					N	E	S	W										
# denotes estimated values due to lack of access																		
T1	Turkey Oak	18	570	2	9	9	9	9	2	5	EM	G	G	Minor deadwood in crown	40+	A	147.0	6.8
T2	Pedunculate Oak	12	417	1	4	4	4	4	1	4	SM	F	F	Over-shaded by T1	20+	C	78.7	5.0
T3	Pedunculate Oak #	16	600	1	7	7	7	7	1	5	EM	G	G	Minor deadwood in crown	40+	A	162.9	7.2
T4	Pedunculate Oak #	14	800	1	7	7	7	7	1	4	EM	G	G		20+	B	289.5	9.6
T5	Pedunculate Oak #	14	600	2	9	9	9	9	7	4	EM	G	G	Malformation at base	20+	B	162.9	7.2
T6	Pedunculate Oak #	8	250	1	4	4	4	4	2	4	SM	F	F		20+	C	28.3	3.0
T7	Pedunculate Oak #	18	600	1	9	9	9	9	3	5	EM	G	G		40+	A	162.9	7.2
T8	Pedunculate Oak #	16	705	1	7	7	7	7	3	5	EM	G	G		40+	A	224.8	8.5
T34	Pedunculate Oak #	18	2000	1	9	9	9	9	1	6	M	G	G	Ivy covered, with hollows and dead branches	40+	A	707.0	15.0
T35	Pedunculate Oak #	16	700	1	7	7	7	7	4	6	SM	G	G		40+	B	221.7	8.4
T36	Beech #	14	500	1	5	5	5	5	3	1	SM	G	G	Offsite	40+	B	113.1	6.0
T37	Field Maple #	14	400	1	4	4	4	4	3	1	SM	G	G		40+	B	72.4	4.8

TREE SURVEY SCHEDULE

1	2	3	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	Species	Height (m)	Stem diameter (mm)	No. of Stems	Branch Spread (m)				First Branch Height (m)	Canopy Height (m)	Life Stage	Physiological Condition	Structural Condition	Tree Work Recommendations/ comments	Remaining Contribution (Years)	Category Grading	RPA (m ²)	RPA Radius (m)
					N	E	S	W										
# denotes estimated values due to lack of access																		
T38	Sycamore #	18	1000	1	8	8	8	8	3	6	M	G	G		40+	A	452.4	12.0
T39	Goat willow #	8	400	1	4	4	4	4	2	2	SM	G	P	Crossing limbs at 1.5m above ground	20+	C	72.4	4.8
T40	Scots Pine	18	542	1	9	9	9	9	8	6	EM	G	G		20+	B	132.9	6.5
T41	Scots Pine	18	705	1	9	9	9	9	8	6	EM	G	G		20+	B	224.8	8.5
T42	Pedunculate Oak	18	1149	1	10	10	10	10	5	10	M	G	G		40+	A	597.2	13.8
T43	Pedunculate Oak #	16	1000	1	10	10	10	10	5	5	M	G	G	Ivy covered	40+	A	452.4	12.0
T44	Ash	16	640	3	8	8	8	8	1	5	EM	P	P		10+	C	185.5	7.7
T45	Pedunculate Oak #	16	800	1	8	8	8	8	6	6	EM	G	G	Ivy covered	40+	A	289.5	9.6
T46	Pedunculate Oak #	16	800	1	8	8	8	8	6	6	EM	G	G	Deadwood in Crown, holes in branches	40+	A	289.5	9.6
T47	Pedunculate Oak #	16	800	1	8	8	8	8	6	6	EM	G	G	Ivy covered	40+	A	289.5	9.6
T48	Pedunculate Oak #	16	800	1	8	8	8	8	6	6	EM	G	G	Ivy covered	40+	A	289.5	9.6
T49	Pedunculate Oak #	16	800	1	8	8	8	8	6	6	EM	G	G	Ivy covered	40+	A	289.5	9.6
T50	Pedunculate Oak #	16	800	1	8	8	8	8	6	6	EM	G	G	Ivy covered	40+	A	289.5	9.6

TREE SURVEY SCHEDULE

1	2	3	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	Species	Height (m)	Stem diameter (mm)	No. of Stems	Branch Spread (m)				First Branch Height (m)	Canopy Height (m)	Life Stage	Physiological Condition	Structural Condition	Tree Work Recommendations/ comments	Remaining Contribution (Years)	Category Grading	RPA (m ²)	RPA Radius (m)
					N	E	S	W										
# denotes estimated values due to lack of access																		
T51	Pedunculate Oak	16	1095	1	8	8	8	8	6	6	EM	G	G	Tree tag number 764	40+	A	542.4	13.1
T52	Beech	16	584	1	5	5	5	5	4	4	SM	G	G	Tree tag number 766	40+	A	154.3	7.0
T53	Horse Chestnut	16	645	1	6	6	6	6	4	4	SM	G	G	Tree tag number 767	40+	A	188.2	7.7
T54	Horse Chestnut	16	844	3	7	7	7	7	4	4	SM	G	G	Tree tag number 768	40+	A	321.9	10.1
G1	Goat willow, English Elm, Elder, Hawthorn hedge	6	100	1	1	1	1	1	1	0	SM	P	P	Dead elms in hedge. Gappy and overgrown with ivy and bramble. Repair and replant	20+	B	4.5	1.2
G2	Hawthorn	0.3	1	1	0.1	0.1	0.1	0.1	0	0	Y	G	G	Newly planted hedge	20+	C	0.0	0.01
G3	Native tree and shrub planting	0.3	1	1	0.1	0.1	0.1	0.1	0	0	Y	G	G	New planting	20+	C	0.0	0.01
G4	Hawthorn, Elder, Blackthorn hedge	3	50	1	1	1	1	1	0	0	SM	G	G		20+	B	1.1	0.6
G5	Hawthorn, Cherry, Elder hedge	4	100	1	1	1	1	1	0	0	SM	F	P	Gappy hedge. Could be replanted/ repaired	20+	B	4.5	1.2
G6	English Elm, Hawthorn, Elder hedge	8	100	1	1.5	1.5	1.5	1.5	0	0	SM	G	F	Leggy and gappy hedge. Cut, repair and replant	20+	B	4.5	1.2
G7	Scots Pine	18	300	1	4	4	4	4	3	4	SM	G	G	Shelter belt trees	40+	A	40.7	3.6
G15	Pedunculate Oak	16	400	1	6	6	6	6	4	5	SM	G	G		40+	B	72.4	4.8

TREE SURVEY SCHEDULE

1	2	3	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	Species	Height (m)	Stem diameter (mm)	No. of Stems	Branch Spread (m)				First Branch Height (m)	Canopy Height (m)	Life Stage	Physiological Condition	Structural Condition	Tree Work Recommendations/ comments	Remaining Contribution (Years)	Category Grading	RPA (m ²)	RPA Radius (m)
					N	E	S	W										
# denotes estimated values due to lack of access																		
G16	English Elm, Hawthorn hedge	10	150	1	1.5	1.5	1.5	1.5	0	0	SM	F	F	Dead elms in hedge. Gappy overgrown with ivy and bramble. Repair and replant	20+	B	10.2	1.8
G17	Pedunculate Oak	14	300	1	4	4	4	4	1	1	SM	G	G		40+	B	40.7	3.6
G18	Sycamore, Pedunculate Oak	16	400	1	4	4	4	4	4	4	SM	G	G	Patch of woodland/ scrub	40+	A	72.4	4.8
G19	Silver Birch, Pedunculate Oak, Elder, Leyland Cypress, Hawthorn, Blackthorn	12	300	1	4	4	4	4	0	0	SM	G	G	Off-site, adjacent to boundary. Considered category A for landscape qualities.	20+	A	40.7	3.6
G20	Hazel, Hawthorn, Pedunculate Oak, Norway Maple, Goat Willow	12	300	1	4	4	4	4	0	0	SM	G	G	Considered category A for Landscape qualities	20+	A	40.7	3.6
G21	Pedunculate Oak	16	400	1	4	4	4	4	3	4	SM	G	G	Considered category A for Landscape qualities. Small trees could be removed if required	40+	A	72.4	4.8

TREE SURVEY SCHEDULE

1	2	3	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	Species	Height (m)	Stem diameter (mm)	No. of Stems	Branch Spread (m)				First Branch Height (m)	Canopy Height (m)	Life Stage	Physiological Condition	Structural Condition	Tree Work Recommendations/ comments	Remaining Contribution (Years)	Category Grading	RPA (m ²)	RPA Radius (m)
					N	E	S	W										
# denotes estimated values due to lack of access																		
G22	Pedunculate Oak	18	1000	1	9	9	9	9	5	18	M	G	G	Contains large, mature trees. removal of any large trees should be avoided.	40+	A	452.4	12.0
G23	Goat Willow, Blackthorn	10	300	1	1.5	1.5	1.5	1.5	0	0	SM	F	F		20+	B	40.7	3.6
G24	Field Maple, Pedunculate Oak, Goat Willow, Hawthorn	12	200	1	3	3	3	3	2	1	SM	G	G		20+	B	18.1	2.4
G25	Scots Pine	20	787	1	10	10	10	10	10	10	M	G	G		40+	A	280.2	9.4
G26	Blackthorn, Hawthorn	8	100	1	2	2	2	2	0	0	SM	G	G		40+	B	4.5	1.2
G27	Pedunculate Oak	16	800	1	4	4	4	4	3	5	SM	G	G		40+	B	289.5	9.6
G28	Hawthorn, Pedunculate Oak hedge	6	100	1	1	1	1	1	0	0	SM	F	F		20+	B	4.5	1.2
G29	Pedunculate Oak, Hawthorn	12	300	1	3	3	3	3	0	0	SM	G	G		20+	B	40.7	3.6
G30	Blackthorn, Hawthorn, Goat Willow, Holly,	16	300	1	4	4	4	4	5	5	SM	G	G		20+	A	40.7	3.6

TREE SURVEY SCHEDULE

1	2	3	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	Species	Height (m)	Stem diameter (mm)	No. of Stems	Branch Spread (m)				First Branch Height (m)	Canopy Height (m)	Life Stage	Physiological Condition	Structural Condition	Tree Work Recommendations/ comments	Remaining Contribution (Years)	Category Grading	RPA (m ²)	RPA Radius (m)
					N	E	S	W										
# denotes estimated values due to lack of access																		
	Field Maple, Hornbeam, Apple																	

APPENDIX 4 – SURVEY SCHEDULE DESCRIPTIONS

TREE SURVEY SCHEDULE DESCRIPTION

Tree Survey Schedule Description		
Column Number	Heading	Description
1	Tree No.	Sequential reference number (as recorded on the tree constraints plan)
2	Species	Species listed by common name
3	Height (m)	Total height of the tree
4	Stem Diameter (mm)	Stem diameter measured at 1.5 m above ground level in accordance to BS 5837:2012
5	No of stems	Total number of stems of a tree
6	Branch spread (m)	Branch spread, taken at the four cardinal points, to derive an accurate representation of the crown (plotted on the tree constraints plan)
7	First branch hgt (m)	Existing height above ground level of first branch measured at the union with the stem
8	Canopy hgt (m)	Existing height of the average clearance of the canopy above ground level
9	Life stage	The age of the tree determined by life stage category: Y- young, SM- semi-mature, EM- early mature, M- mature, OM- over mature, V- veteran
10	Physiological condition	The physiological condition of a tree based on a tree health assessment: G- good, F- fair, P- poor, D- dead
11	Structural condition	The structural condition of a tree based on structural integrity and signs of structural defects which may cause failure: G- good, F- fair, P- poor, D- dead
12	Tree work recommendations/ comments	Work which is recommended for a tree to improve its longevity and safety in its present context. The recommendations are recorded primarily to assist with the categorisation of the trees. Please see Section 6, Tree Management for further limitations.
13	Remaining contribution (yrs)	Estimated remaining contribution in years that the trees will have on the landscape in their current context. A tree will not necessarily remain safe for the entirety of the remaining years. The remaining contribution has been categorised as follows: <10, 10+, 20+ and 40+
14	Category grading	The trees have been graded as per BS 5837: 2012 recommendations. The grading is formed by a letter and a number. The letter denotes the quality grading of the tree, the number represents one of three sub categories. Sub categories 1, 2 and 3 reflect arboricultural, landscape and cultural qualities respectively. The primary letter grading is as follows: 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 A- Trees of high quality with an estimated remaining life expectancy of at least 40 years B- Trees of moderate quality with an estimated remaining life expectancy of at least 20 years 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
15	RPA (m ²)	The root protection area calculated following BS 5837: 2012
16	RPA radius (m)	The root protection area radius calculated following BS 5837: 2012

APPENDIX 5 – KEY TO SCIENTIFIC NAMES

SCIENTIFIC NAMES KEY

Common Name	Scientific Name
Field Maple	<i>Acer campestre</i>
Norway Maple	<i>Acer platanoides</i>
Sycamore	<i>Acer pseudoplatanus</i>
Horse Chestnut	<i>Aesculus hippocastanum</i>
Silver Birch	<i>Betula pendula</i>
Hornbeam	<i>Carpinus betulus</i>
Hazel	<i>Corylus avellana</i>
Hawthorn	<i>Crataegus monogyna</i>
Beech	<i>Fagus sylvatica</i>
Ash	<i>Fraxinus excelsior</i>
Holly	<i>Ilex aquifolium</i>
Apple	<i>Malus sp.</i>
Scots Pine	<i>Pinus sylvestris</i>
Cherry	<i>Prunus sp.</i>
Blackthorn	<i>Prunus spinosa</i>
Turkey Oak	<i>Quercus cerris</i>
Pedunculate Oak	<i>Quercus robur</i>
Goat Willow	<i>Salix caprea</i>
Elder	<i>Sambucus nigra</i>
English Elm	<i>Ulmus procera</i>
Leyland Cypress	<i>x Cuprocyparis leylandii</i>

Common and scientific names based on Stace (2010) New flora of the British Isles (3rd Edition), Cambridge University Press. For species not present in Stace, scientific and common and names were taken from Johnson and More (2006). Tree Guide, Harper Collins Publishers Ltd.

SITE

Marriott's Park, Taverham, Norfolk, NR8 6HL

PROJECT NO.

3551,EC,AR,DS

DATE






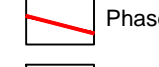

November 2018

APPENDIX 6 – DRAWINGS

Tree Constraints Plan – Drawing Ref. 3551,EC/002–1–8/Rev 0

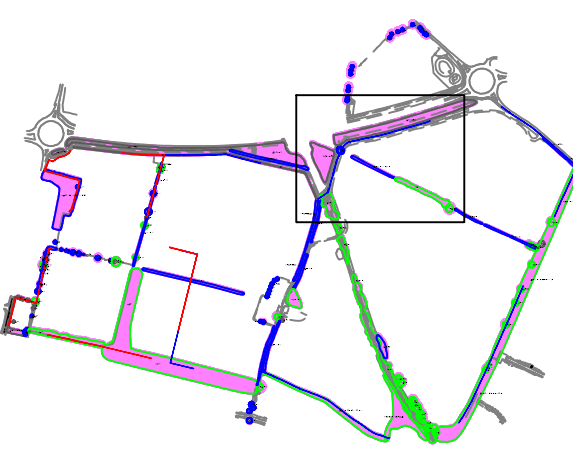
REV	DATE	DESCRIPTION

LEGEND

-  Category U
-  Category A
Trees of high quality
-  Category B
Trees of moderate quality
-  Category C
Trees of low quality
-  RPA using formula in accordance with BS5837:2012
-  Phase 1 site boundary
-  Phase 2 site boundary

denotes estimated values due to lack of access

Trees categorised in accordance with BS5837:2012 "Trees in relation to design, demolition and construction" (1:1 scale) should not be relied upon



LOCATIONS ARE APPROXIMATE.



PROJECT
Marriott's Park,
Taverham, Norfolk, NR8 6HL

TITLE
Tree Constraints

DRAWING NUMBER
3551,EC,AR,DS 002-3/Rev 0

CLIENT
M Scott Properties Ltd

SCALE 1:600 @ A1 **DATE** 20/11/18

geosphere environmental ltd

Geotechnical, Environmental and Ecological Consultants
T: 01603 298 076 W: www.geosphere-environmental.co.uk

