



**Arboricultural Impact Assessment to BS5837:2012**

**Speller Metcalfe Malvern Ltd**

**Brough Park Leisure Centre,  
Brough Park,  
Leek,  
ST13 6AT.**

**28 March 2024**

**Matthew Edwards BSc (Hons) TechArborA**

---

## Table of Contents

|                                                    |    |
|----------------------------------------------------|----|
| 1. Introduction .....                              | 3  |
| 2. Executive Summary .....                         | 3  |
| 3. General Information .....                       | 5  |
| 4. Tree Survey .....                               | 6  |
| 5. Arboricultural Impact Assessment.....           | 7  |
| Tree Works .....                                   | 9  |
| Protected Species .....                            | 12 |
| Appendix 1: Arboricultural Impact Assessment ..... | 14 |
| Appendix 2: Tree Survey Schedule .....             | 16 |
| Appendix 3: Contact Details .....                  | 18 |
| Document Production Record .....                   | 19 |

## 1. Introduction

Arbtech Consulting Limited (Arbtech) received written instruction on 11<sup>th</sup> April 2023 from Speller Metcalfe Malvern Ltd to attend Brough Park Leisure Centre, Brough Park, Leek, ST13 6AT; grid reference, SJ 98642 57000 to undertake an arboricultural survey a to BS5837:2012 guidance to assess trees, hedges and major shrub groups growing on and within influencing distance of the site and to produce a Schedule of Trees, Tree Constraints Plan, Arboricultural Impact Assessment.

## 2. Executive Summary

This report describes the extent and effect of the proposed development at Brough Park Leisure Centre, Brough Park, Leek, ST13 6AT (“site”) on individual trees and groups of trees within and adjacent to the site.

Trees within the site were surveyed; using a methodology guided by British Standard 5837:2012 ‘Trees in relation to design, demolition and construction – Recommendations’ (“BS5837”).

Subsequently, this report has been produced, balancing the layout of the proposed development against the competing needs of trees. This report comprises all of the requisite elements of an arboricultural implications assessment, method statement and supporting plans.

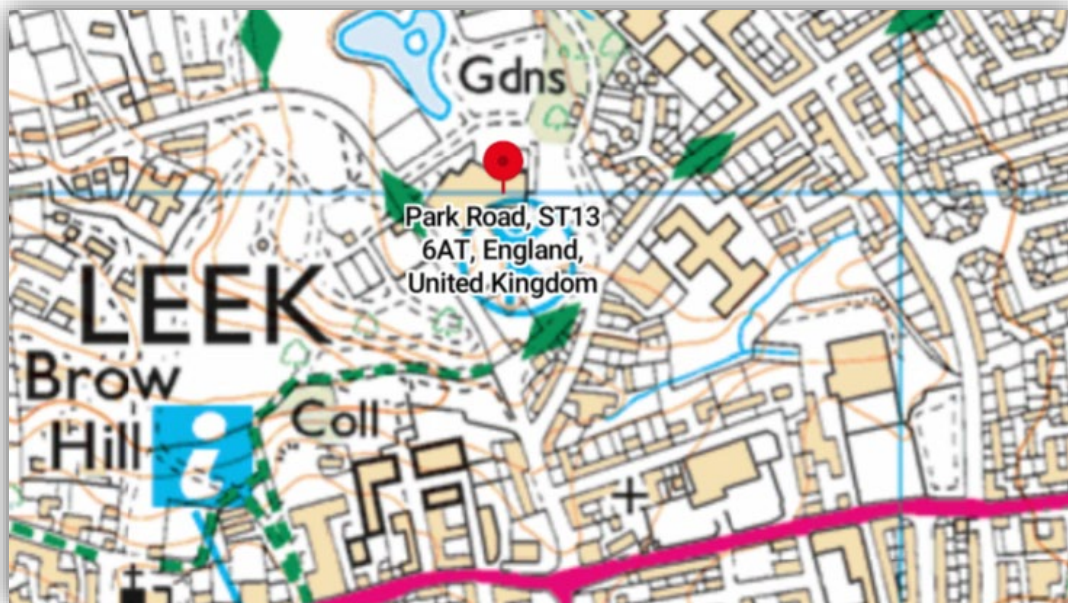


Figure 1: OS Map (Bing Maps)

---

## Checklist for Submission to Local Planning Authority

|                                  |   |
|----------------------------------|---|
| Tree survey                      | ✓ |
| Tree constraints plan            | ✓ |
| Arboricultural impact assessment | ✓ |

This report and its appendices follow precisely the strategy for arboricultural appraisal intended to provide local planning authorities with evidence that trees have been properly considered throughout the development process.

It is the conclusion of this report that the overall quality and longevity of the amenity contribution provided for by the trees and groups of trees within and adjacent to the site will not be adversely affected as a result of the local planning authority consenting to the proposed development.

### 3. General Information

Client: Speller Metcalfe Malvern Ltd

Site: Brough Park Leisure Centre, Brough Park, Leek, ST13 6AT

Brief proposal description: Extension of car park and demolition of existing building and construction of building.

Planning application reference: N/A

Table 1: Documents referred to.

| Document                            | Reference No.  |
|-------------------------------------|----------------|
| Topographical / Site survey drawing | 42987/1        |
| Proposed layout drawing             | L(O)004        |
| Landscape master plan drawing       | N/A            |
| LPA pre-app comments                | N/A            |
| British Standard 5837:2012          | “BS5837”       |
| Arboricultural Impact Assessment    | Arbtech AIA 01 |

## 4. Tree Survey

Survey: An arboricultural survey to BS5837 of all trees within impacting distance of the site was undertaken by Max Bell on 1<sup>st</sup> May 2023.

A total of 32No. individual trees & 4No. groups of trees were surveyed. Details for each of the trees surveyed are provided in the Schedule of Trees (see Appendix 1)

Table 2: Documents upon which this tree survey has been based.

| Document             | Originator         | Reference Number | Title                |
|----------------------|--------------------|------------------|----------------------|
| Topographical Survey | Midland Survey Ltd | 42987/1          | Topographical Survey |

Limitations: The survey was made at ground level using visual observation only. Detailed examinations, such as climbing inspections and decay detection equipment were not employed, though may form part of the survey's management recommendations. Measurements were taken using specialist tapes, laser and GPS devices. Where this was not possible, measurements are estimated.

Scope: Pre-development tree surveys make arboricultural management recommendations based exclusively upon the individual tree or group of trees condition relative to their present context (*i.e., not in relation to the proposed development*).

Legal Status: No statutory protection check has been performed. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order ("TPO"), and those trees without. This is principally because a detailed planning consent overrides any TPO protection. Consequently, we do not seek to offer any comparison between or infer any difference in the quality or importance of TPO trees and other trees.

\* For more information on the surveyed trees please see Arbtech Consulting Ltd, Tree Survey Schedule (Appendix 1), Tree Survey Report and Tree Constraints Plan.

## 5. Arboricultural Impact Assessment

Table 3: Documents upon which this assessment has been based.

| Document             | Originator         | Reference Number | Title                |
|----------------------|--------------------|------------------|----------------------|
| Topographical Survey | Midland Survey Ltd | 42987/1          | Topographical Survey |
| Site Plan            | Roberts Limbrick   | L(0)004          | Proposed Site Plan   |

There are a number of issues that may need to be addressed in an arboricultural impact assessment between the trees and the proposed development, these are as follows:

- The effect and extent of the proposed development within the root protection areas (RPAs) of retained trees;
- The potential conflicts of the proposed development with canopies of retained trees; and
- The likelihood of any future remedial works to retained trees beyond which would have been scheduled as a part of usual management.

Table 4: Impacts upon the RPAs of retained trees.

| Tree Number | Species     | Proposed structure | RPA (m <sup>2</sup> ) | Incursion         |      |
|-------------|-------------|--------------------|-----------------------|-------------------|------|
|             |             |                    |                       | (m <sup>2</sup> ) | (%)  |
| 13          | Common lime | Car park           | 52.3                  | 3.0086            | 5.8  |
| 15          | Sycamore    | Car park           | 173.9                 | 31.27             | 18.0 |
| 16          | Wild cherry | Car park           | 40.7                  | 5.7495            | 14.1 |
| 17          | Wild cherry | Car park           | 40.7                  | 5.2176            | 12.8 |

These impacts can be seen on the Arboricultural Impact Assessment drawing number Arbtech AIA 01.

### Trees to be removed

A total of 5No. individual trees require removal to facilitate the proposed scheme.

A breakdown of all tree removals and pruning works can be seen in Table 7: Summary of Tree Works

Table 5: Number of individual trees to be removed.

| U | A | B | C |
|---|---|---|---|
| 0 | 0 | 2 | 3 |

Table 6: Number of groups to be removed.

| U     | A     | B     | C     |
|-------|-------|-------|-------|
| 0 (0) | 0 (0) | 0 (0) | 0 (0) |

() = partial removal of a group

Canopy cover is ecologically important and the loss of canopy cover by this tree will be mitigated with planting within the development.

## Tree Works

For reasons of public safety, all tree works referred to herein must be carried out prior to any site personnel commencing works or any building materials being delivered.

Table 7: Summary of Tree Works.

| No. | Species      | Works                                                                               | Category |
|-----|--------------|-------------------------------------------------------------------------------------|----------|
| 11  | Crimean lime | Fell; remove to ground level and remove stumps due to presence of Kretzschmaria.    | C        |
| 12  | Crimean lime | Fell; remove to ground level and remove stumps due to presence of Kretzschmaria.    | C        |
| 13  | Common lime  | Prune; crown lift northern side to provide 3.5m clearance over proposed road.       | B        |
| 14  | Common lime  | Fell; remove tree to ground level to facilitate proposed parking.                   | B        |
| 16  | Wild cherry  | Prune; crown lift eastern side to provide 3.5m clearance over proposed parking.     | B        |
| 17  | Wild cherry  | Prune; crown lift eastern side to provide 3.5m clearance over proposed parking.     | B        |
| 19  | Common beech | Fell; remove to ground level and remove stumps due to facilitate proposed building. | B        |
| 24  | Common lime  | Fell; remove to ground level and remove stumps due to presence of Kretzschmaria.    | C        |

### Notes

All tree work is to be undertaken in accordance with British Standard BS 3998:2010, Recommendations for tree work. All arising's are to be removed and the site is to be left as found. Care is to be taken of the ground around retained trees to make sure that it does not become compacted as a result of tree surgery operations. No equipment or vehicles such as timber Lorries, tractors, excavators or cranes shall be parked or driven beneath the crowns of any retained trees, to prevent subsequent compaction and root death.

---

## Tree removal

A tree should be felled in one piece only when there is no significant risk of damage to people, property or protected species (see Annex A).

Where restrictions (e.g., lack of space, buildings, other features, land ownership or use, or other trees which are to be retained) cannot be overcome, trees should be dismantled in sections.

This also applies where a tall stump is being retained but where branches are to be removed/pruned.

Extensively decayed trees can be unpredictable when they are being felled, and special precautions should therefore be taken, such as the use of a winch to guide the direction of fall.

## Stump removal – stump grinding

Stump grinding should be to a minimum of 300mm deep or to extend through the base of the stump leaving the major roots disconnected if the intention is to reduce the potential for the spread of Honey fungus.

The grinding residue should be treated as arising's and removed from site.

*NOTE: Mechanical destruction of a stump-by-stump grinding is less disruptive to the site than digging out.*

The hole left by stump removal, should be filled with soil or other material. The filling should be appropriate for future site usage, and for any surface treatment that is to be installed.

Where future plant growth is desired, the backfill material should be firmed in 150 mm layers by treading, avoiding excessive compaction and destruction of the soil structure.

## Stump removal - digging

Stump removal by digging out should include disposal/utilisation of woody material (see Clause 13).

*NOTE: Whether done by hand or machine, digging out can cause severe disturbance of the site.*

Where possible, when winching out a stump, a ground or other type of anchor should be used rather than a tree to be retained. If there is no alternative to using such a tree as an anchor, appropriate protective measures should be adopted.

## After stump removal

The hole left by stump removal, whether by digging out or grinding, should be filled with soil or other material. The filling should be appropriate for future site usage and for any surface treatment that is to be installed.

Where future plant growth is desired, the back fill material should be firmed in 150mm layers by treading, avoiding excessive compaction and destruction of the soil structure.

---

## Protected Species

### Conservation Status of British Bats

The general consensus in Britain and Europe is that virtually all bat species are declining and vulnerable. Our understanding of population status is poor as there is very little historical data for most bat species. Certain species, such as the horseshoe bats, are better understood and have well documented contractions in range and population size.

Given this general picture of decline in UK Government within the UK Biodiversity Action Plan has designated five species of bats as priority species (greater and lesser horseshoe bats, barbastelle, Bechstein's and pipistrelle). These plans provide an action pathway whereby the maintenance and restoration of the former populations levels are investigated.

### Legal Status of British Bats

Given the above position all British bats as well as their breeding sites and resting places enjoy national and international protection.

All bat species in the UK are fully protected under the Wildlife and Countryside Act 1981 (as amended) through inclusion in Schedule 5. All bats are also listed on Annex IV (and some on Annex II) of the EC Habitats Directive giving further, European protection. Taken together the act and Conservation of Habitats and Species Regulations 2012 (as amended)\* make it an offence to; intentionally or deliberately kill, injure or capture (take) bats;

- Deliberately disturb bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts;
- Possess or transport a bat or any part of a bat, unless acquired legally;
- Sell, barter or exchange bats, or parts of bats

The legislation although not strictly affording protection to foraging grounds does protect roost sites. Bat roosts are protected at all times of the year whether or not bats are present. Any disturbance of a roost due to development must be licenced.

*\*the regulations that delivered by the UK's commitments to the Habitats Directive.*

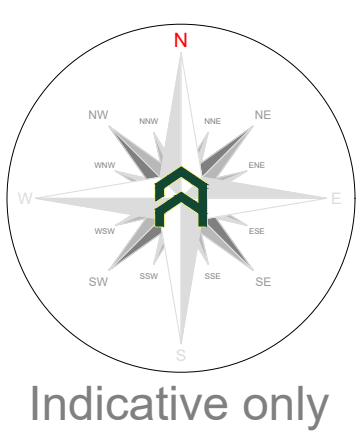
---

## Breeding birds

All nesting birds are protected under the Wildlife and Countryside Act (as amended) 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. Furthermore, a number of birds enjoy further protection under that Act and are listed on Schedule 1 of the Act. These further protected birds are also protected from disturbance and it may be necessary to operate “no-go” buffer zones around such nests – typically out to 100m.

Planning policy guidance on the treatment of species identified as priorities under the biodiversity action programme suggests that local authorities should take measures to protect the habitats of these species from further decline through policies in local development documents and should ensure that they are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. The conservation of these species should be promoted through the incorporation of beneficial biodiversity designs within developments.

## Appendix 1: Arboricultural Impact Assessment



Indicative only

| Arboricultural Impacts                                    |               |
|-----------------------------------------------------------|---------------|
| Impacts                                                   | Nos. of trees |
| Trees to be removed                                       | 0             |
| Groups / Hedges to be removed (Partial removal of groups) | 0 (R)         |
| Trees with proposed incursions into RPA's                 | 4             |
| Groups / Hedges with proposed incursions into RPA's       | 0             |
| Trees that will require pruning                           | 3             |
| Groups / Hedges that will require pruning                 | 0             |
| Trees to be transplanted                                  | 0             |
| Groups / Hedges to be transplanted                        | 0             |

| No. | Species     | Proposed structure | Incursion    | RPA & Canopy |
|-----|-------------|--------------------|--------------|--------------|
| 13  | Common lime | Car park           | RPA          | Canopy       |
| 15  | Sycamore    | Car park           | RPA          |              |
| 16  | Wild cherry | Car park           | RPA & Canopy |              |
| 17  | Wild cherry | Car park           | RPA & Canopy |              |

| Arboricultural Impacts - RPA's (Area) |             |                       |                             |               |
|---------------------------------------|-------------|-----------------------|-----------------------------|---------------|
| No.                                   | Species     | RPA (m <sup>2</sup> ) | Incursion (m <sup>2</sup> ) | Incursion (%) |
| 13                                    | Common lime | 62.3                  | 3.0086                      | 5.8           |
| 15                                    | Sycamore    | 173.9                 | 31.27                       | 18.0          |
| 16                                    | Wild cherry | 40.7                  | 5.7665                      | 14.1          |
| 17                                    | Wild cherry | 40.7                  | 5.2176                      | 12.8          |

| Tree Work Schedule |              |                                                                                  |          |  |
|--------------------|--------------|----------------------------------------------------------------------------------|----------|--|
| No.                | Species      | Works                                                                            | Category |  |
| 11                 | Crabapple    | F&L remove to ground level and remove stump due to presence of footpaths         | C        |  |
| 12                 | Crabapple    | F&L remove to ground level and remove stumps due to presence of footpaths        | C        |  |
| 13                 | Common lime  | Prune, crown lift northern side to provide 3m clearance over proposed road       | B        |  |
| 14                 | Common lime  | F&L remove tree to ground level to facilitate proposed parking                   | B        |  |
| 15                 | Wild cherry  | Prune, crown lift western side to provide 3m clearance over proposed parking     | B        |  |
| 16                 | Wild cherry  | Prune, crown lift eastern side to provide 3m clearance over proposed parking     | B        |  |
| 17                 | Wild cherry  | F&L remove to ground level and remove stumps due to facilitate proposed building | B        |  |
| 19                 | Common beech | F&L remove to ground level and remove stumps due to presence of footpaths        | C        |  |
| 24                 | Common lime  | F&L remove to ground level and remove stump due to presence of footpaths         | C        |  |

All tree work is to be undertaken in accordance with British Standard BS 3968:2010 Tree work - Recommendations.  
All stumps are to be removed and the site is to be left as found.  
Care is to be taken of the ground around retained trees to make sure that it does not become compacted as a result of tree surgery operations. No equipment or vehicles such as timber lorries, tractors, excavators or cranes shall be parked or driven beneath the crowns of any retained trees, to prevent subsequent compaction and root death.

No. of individual trees to be removed

| U     | A     | B     | C     |
|-------|-------|-------|-------|
| 0 (R) | 0 (R) | 0 (R) | 0 (R) |

No. of groups / hedges to be removed

| U     | A     | B     | C     |
|-------|-------|-------|-------|
| 0 (R) | 0 (R) | 0 (R) | 0 (R) |

(-) Partial removal of a group

**Arboricultural Method Statement**  
All tree work is to be undertaken in accordance with British Standard BS 3968:2010 Tree work - Recommendations.  
All stumps are to be removed and the site is to be left as found.  
Care is to be taken of the ground around retained trees to make sure that it does not become compacted as a result of tree surgery operations. No equipment or vehicles such as timber lorries, tractors, excavators or cranes shall be parked or driven beneath the crowns of any retained trees, to prevent subsequent compaction and root death.

**'No Dig' Surfacing**  
Trees can be affected by construction within the RPA's either through the direct damage caused by the removal of roots, compaction of the rooting environment or secondary damage such as poisoning through leaks and spills (oil, fuels, etc) or through desiccation (road salt, etc.).

Proposed hard surfacing within the RPA's of retained trees is to be designed so that it can be situated above the existing soil level and to minimise any adverse impact upon the tree RPA's. For the use of traditional foundations can result in excessive root loss through direct removal of roots during excavation and by compaction of the soil beneath the excavation, as such this 'traditional' type of foundation should be avoided.  
When designing hard surfacing that is to be situated within RPA's, the design team need to pay particular attention to the proposed usage (pedestrian, domestic traffic, delivery vans, Emergency vehicles, TGVs etc.), the existing and proposed levels of hard surfacing and finished floor levels, edging types and details, proximity to tree trunks and surface rooting, contamination capture, SUDs, etc.

Possible sub-bases (foundations systems) for hard surfacing situated within the RPA's of retained trees could include:  
• A proprietary system such as a multi-dimensional confinement system (Cellweb TRP or similar).  
• Engineered solution such as a road deck, bridge, etc.

An engineered solution is likely require a level of excavation for site specific investigations to locate roots to aid in foundation design so that a suitable foundation can be designed to avoid roots and for the installation of the structure.

NB: The use of a multi-dimensional confinement systems and or an engineered solution will affect the finished level of the hard surfacing by raising the levels and needs to be taken into consideration when designing foundations and setting the finished floor levels of adjacent buildings.

**Utility apparatus**

**Underground utility apparatus**  
Mechanical trenching for the installation of underground apparatus and drainage serves any roots present and can change the local hydrology in a way that adversely affects the health of the tree. For this reason, particular care should be taken in the route and methods of installation of all underground apparatus. Wherever possible, apparatus should be routed outside of RPA's. Where this is not possible, it is preferable to keep apparatus together in common ducts, all inspection chambers should be sited outside of the RPA's.  
Where underground apparatus is to pass within the RPA's, detailed plans showing the proposed route should be drawn up in conjunction with the project arboriculturist. In such cases trenchless insertion methods should be used with entry and retrieval pits being located outside of the RPA's. If this option is not feasible and providing roots can be retained, and protected excavations should be undertaken using hand held tools (air-spades, forks, shovels) or a combination of trenchless and manual excavation (broken trench).  
Any design and installation should be undertaken in accordance with the National Joint Utilities Guidelines (NJUG).  
**Above-ground utility apparatus**  
Above-ground apparatus (including CCTV cameras and lighting) should be sited to avoid the need for detrimental tree pruning, as such the current and future crown size of the tree should be assessed.  
Tree branches can be pruned back with care to provide space, though it is not appropriate for reactive and significant tree work to be an initial design solution unless this is a suitable management outcome for the tree. Any pruning should be undertaken in accordance with BS3968:2010.



Project: Brough Park Leisure Centre  
Brough Park  
Leek  
ST13 6AT

Client: SPELLER METCALFE MALVERN LTD

Drawing: Arboricultural Impact Assessment

Based on: L(0)004

Drawing No: Arbtech AIA 01

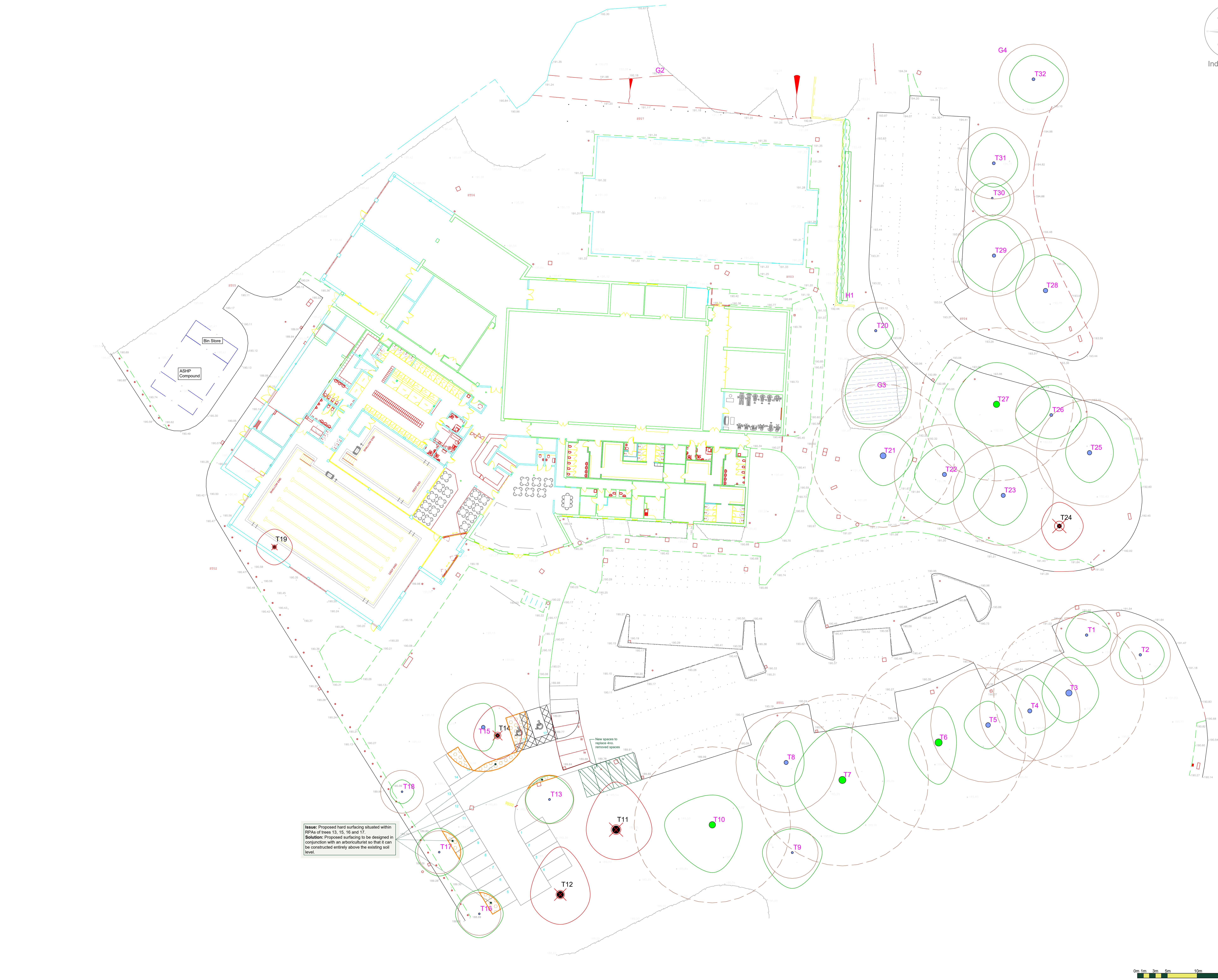
Date: March 2024 Scale: 1:200 @ A0 Drawn: MNE

Key:

| Tree Nos.           | T1                 | Tree Canopies      | Trunks             |    |
|---------------------|--------------------|--------------------|--------------------|----|
| RPA's               | Category 'A' trees | Category 'B' trees | Category 'C' trees | T1 |
| Category 'B' groups | Category 'C' trees | Category 'D' trees | Category 'E' trees | T1 |

Incursion - Hard surfacing

© Arbtech Consulting Ltd, 2021  
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage or retrieval system, without prior written permission from Arbtech Consulting Ltd.



Issue: Proposed hard surfacing situated within RPA's of trees 13, 15, 16 and 17.  
Solution: Proposed surfacing to be designed in conjunction with an arboriculturist so that it can be constructed entirely above the existing soil level.

## Appendix 2: Tree Survey Schedule

## BS5837:2012 TREE SCHEDULE

**SITE**  
Brough Park Leisure Centre

**CLIENT**  
SPELLER METCALFE MALVERN LTD

**DATE**  
4th May 2023

**REFERENCE**  
Arbtech TS 01

| Tree No. | Common Name     | Botanical Name  | Height (m) | Stem Dia (mm) | Crown Spread (m) |   |   |     | Height of Crown Clearance (m) | Age Class    | Phys Con | Struc Con | Estimated remaining life | Additional notes                                                                                                                                                       | Preliminary recommendations | BS5837 Retention Category | RPA (m <sup>2</sup> ) | RPA Radius (m) |
|----------|-----------------|-----------------|------------|---------------|------------------|---|---|-----|-------------------------------|--------------|----------|-----------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------|-----------------------|----------------|
|          |                 |                 |            |               | N                | E | S | W   |                               |              |          |           |                          |                                                                                                                                                                        |                             |                           |                       |                |
| T1       | Crimean lime    | Tilia euchlora  | 5          | 430           | 4                | 4 | 3 | 3.5 | 2                             | Early-mature | Good     | Good      | Medium (20 to 40 years)  | Evidence of historic pruning works to tree with wounds up to 150mm in diameter now occluding. Small to medium diameter dead wood within crown.                         | 0                           | B1, 2                     | 82                    | 5.10           |
| T2       | Crimean lime    | Tilia euchlora  | 5          | 420           | 4                | 4 | 4 | 3.5 | 2                             | Early-mature | Good     | Good      | Medium (20 to 40 years)  | Evidence of historic pruning works to tree with wounds up to 150mm in diameter now occluding. Small to medium diameter dead wood within crown.                         | 0                           | B1, 2                     | 82                    | 5.10           |
| T3       | Common lime     | Tilia x europea | 16         | 1050          | 6                | 5 | 5 | 4.5 | 2                             | Mature       | Good     | Good      | Medium (20 to 40 years)  | Dense epicormic regrowth at base of tree. Unable to inspect base due to restricted visuals. Epicormic growth throughout crown with small to medium diameter dead wood. | 0                           | B1, 2                     | 499                   | 12.60          |
| T4       | Pedunculate oak | Quercus robur   | 16         | 700           | 6                | 5 | 4 | 2.5 | 2                             | Mature       | Good     | Good      | Long (>40 years)         | No notable features.                                                                                                                                                   | 0                           | B1, 2                     | 222                   | 8.40           |
| T5       | Common lime     | Tilia x europea | 10         | 800           | 4                | 3 | 4 | 4   | 2                             | Mature       | Good     | Good      | Medium (20 to 40 years)  | Dense epicormic growth around base of tree and into crown. Small to medium diameter dead wood within crown.                                                            | 0                           | B1, 2                     | 290                   | 9.60           |
| T6       | Pedunculate oak | Quercus robur   | 17         | 1220          | 6                | 3 | 7 | 5   | 2                             | Mature       | Good     | Good      | Long (>40 years)         | Evidence of historic pruning works to main stem with wounds up to 500mm in diameter now occluding. Good example of species.                                            | 0                           | A1, 2                     | 679                   | 14.70          |

## BS5837:2012 TREE SCHEDULE

**SITE**  
Brough Park Leisure Centre

**CLIENT**  
SPELLER METCALFE MALVERN LTD

**DATE**  
4th May 2023

**REFERENCE**  
Arbtech TS 01

| Tree No. | Common Name     | Botanical Name         | Height (m) | Stem Dia (mm) | Crown Spread (m) |   |   |   | Height of Crown Clearance (m) | Age Class    | Phys Con | Struc Con | Estimated remaining life | Additional notes                                                                                                                                                           | Preliminary recommendations | BS5837 Retention Category | RPA (m <sup>2</sup> ) | RPA Radius (m) |
|----------|-----------------|------------------------|------------|---------------|------------------|---|---|---|-------------------------------|--------------|----------|-----------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------|-----------------------|----------------|
|          |                 |                        |            |               | N                | E | S | W |                               |              |          |           |                          |                                                                                                                                                                            |                             |                           |                       |                |
| T7       | Pedunculate oak | Quercus robur          | 17         | 1200          | 9                | 7 | 9 | 8 | 2                             | Mature       | Good     | Good      | Long (>40 years)         | Evidence of historic pruning works to main stem with wounds up to 300mm in diameter now occluding. Good example of species.                                                | 0                           | A1, 2                     | 651                   | 14.40          |
| T8       | Horse chestnut  | Aesculus hippocastanum | 12         | 700           | 7                | 3 | 4 | 5 | 2                             | Mature       | Good     | Fair      | Medium (20 to 40 years)  | Large bark defect to the south of main stem from ground level to approx. 4m up main stem approx. 200mm in diameter now occluding. Growing predominantly to the north west. | 0                           | B1, 2                     | 222                   | 8.40           |
| T9       | Pedunculate oak | Quercus robur          | 4          | 360           | 4                | 5 | 6 | 5 | 1.5                           | Early-mature | Good     | Good      | Long (>40 years)         | No notable features.                                                                                                                                                       | 0                           | B1, 2                     | 55                    | 4.20           |
| T10      | Pedunculate oak | Quercus robur          | 16         | 1090          | 5                | 5 | 8 | 8 | 2.5                           | Mature       | Good     | Good      | Long (>40 years)         | No notable features. Good example of species.                                                                                                                              | 0                           | A1, 2                     | 547                   | 13.20          |
| T11      | Crimean lime    | Tilia euchlora         | 15         | 1260          | 8                | 6 | 5 | 5 | 2                             | Mature       | Fair     | Fair      | Short (10 to 20 years)   | Significant quantities of kretshumeria at base to the south. Given size of tree and target zone, it is recommended tree be removed as soon as is feasible.                 | 0                           | C2                        | 707                   | 15.00          |
| T12      | Crimean lime    | Tilia euchlora         | 15         | 1100          | 8                | 5 | 5 | 5 | 2                             | Mature       | Fair     | Fair      | Short (10 to 20 years)   | kretshumeria at base to the east. Given size of tree and target zone, it is recommended tree be removed as soon as is feasible.                                            | 0                           | C2                        | 547                   | 13.20          |

## BS5837:2012 TREE SCHEDULE

### SITE

Brough Park Leisure Centre

### CLIENT

SPELLER METCALFE MALVERN LTD

### DATE

4th May 2023

### REFERENCE

Arbtech TS 01

| Tree No. | Common Name | Botanical Name      | Height (m) | Stem Dia (mm) | Crown Spread (m) |   |   |   | Height of Crown Clearance (m) | Age Class    | Phys Con | Struc Con | Estimated remaining life | Additional notes                                                                                                | Preliminary recommendations | BS5837 Retention Category | RPA (m <sup>2</sup> ) | RPA Radius (m) |
|----------|-------------|---------------------|------------|---------------|------------------|---|---|---|-------------------------------|--------------|----------|-----------|--------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------|-----------------------|----------------|
|          |             |                     |            |               | N                | E | S | W |                               |              |          |           |                          |                                                                                                                 |                             |                           |                       |                |
| T13      | Common lime | Tilia x europea     | 9          | 340           | 4                | 4 | 4 | 4 | 2                             | Early-mature | Good     | Good      | Medium (20 to 40 years)  | No notable features.                                                                                            | 0                           | B1, 2                     | 55                    | 4.20           |
| T14      | Common lime | Tilia x europea     | 14         | 700           | 5                | 4 | 4 | 4 | 2                             | Mature       | Good     | Good      | Medium (20 to 40 years)  | No notable features.                                                                                            | 0                           | B1, 2                     | 222                   | 8.40           |
| T15      | Sycamore    | Acer pseudoplatanus | 8          | 620           | 4                | 2 | 4 | 6 | 2.5                           | Mature       | Good     | Good      | Medium (20 to 40 years)  | Growing predominantly to the north west with Eastern side of canopy suppressed due to larger neighbouring tree. | 0                           | B1, 2                     | 177                   | 7.50           |
| T16      | Wild cherry | Prunus avium        | 3          | 300           | 4                | 4 | 4 | 4 | 2                             | Early-mature | Good     | Good      | Short (10 to 20 years)   | No notable features                                                                                             | 0                           | B1, 2                     | 41                    | 3.60           |
| T17      | Wild cherry | Prunus avium        | 3          | 300           | 4                | 4 | 4 | 4 | 2                             | Early-mature | Good     | Good      | Short (10 to 20 years)   | No notable features                                                                                             | 0                           | B1, 2                     | 41                    | 3.60           |
| T18      | Wild cherry | Prunus avium        | 3          | 300           | 2                | 2 | 2 | 2 | 2                             | Early-mature | Good     | Good      | Short (10 to 20 years)   | No notable features                                                                                             | 0                           | B1, 2                     | 41                    | 3.60           |

## BS5837:2012 TREE SCHEDULE

**SITE**  
Brough Park Leisure Centre

**CLIENT**  
SPELLER METCALFE MALVERN LTD

**DATE**  
4th May 2023

**REFERENCE**  
Arbtech TS 01

| Tree No. | Common Name  | Botanical Name  | Height (m)   | Stem Dia (mm) | Crown Spread (m) |     |   |   | Height of Crown Clearance (m) | Age Class    | Phys Con | Struc Con | Estimated remaining life | Additional notes                                                                                                                           | Preliminary recommendations | BS5837 Retention Category | RPA (m <sup>2</sup> ) | RPA Radius (m) |
|----------|--------------|-----------------|--------------|---------------|------------------|-----|---|---|-------------------------------|--------------|----------|-----------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------|-----------------------|----------------|
|          |              |                 |              |               | N                | E   | S | W |                               |              |          |           |                          |                                                                                                                                            |                             |                           |                       |                |
| T19      | Common beech | Fagus sylvatica | Early-mature | 6             | 3                | 3   | 3 | 3 | 1.5                           | Early-mature | Good     | Good      | Medium (20 to 40 years)  | No notable features                                                                                                                        | 0                           | B1, 2                     | 92                    | 5.40           |
| T20      | Wild cherry  | Prunus avium    | Mature       | 3             | 3                | 3   | 3 | 3 | 2                             | Mature       | Good     | Good      | Medium (20 to 40 years)  | No notable features.                                                                                                                       | 0                           | B1, 2                     | 72                    | 4.80           |
| T21      | Common lime  | Tilia x europea | Mature       | 13            | 4                | 5   | 5 | 4 | 2                             | Mature       | Good     | Good      | Medium (20 to 40 years)  | Main stem forks at approx. 1.5m from ground level to form 2 co dominant stems. No notable features.                                        | 0                           | B1, 2                     | 452                   | 12.00          |
| T22      | Common lime  | Tilia x europea | Mature       | 15            | 5                | 3.5 | 5 | 5 | 3                             | Mature       | Good     | Good      | Medium (20 to 40 years)  | Dense epicormic growth at base of tree. Unable to inspect base due to restricted visuals. Small to medium diameter dead wood within crown. | 0                           | B1, 2                     | 222                   | 8.40           |
| T23      | Common lime  | Tilia x europea | Mature       | 15            | 5                | 4   | 5 | 5 | 3                             | Mature       | Good     | Good      | Medium (20 to 40 years)  | Dense epicormic growth at base of tree. Unable to inspect base due to restricted visuals. Small to medium diameter dead wood within crown. | 0                           | B1, 2                     | 222                   | 8.40           |
| T24      | Common lime  | Tilia x europea | Mature       | 15            | 4                | 4   | 4 | 3 | 3                             | Mature       | Fair     | Fair      | Short (10 to 20 years)   | Kretshumeria fungus found at base of tree. Given the size of tree and target zone, recommended for removal of tree as soon as feasible.    | 0                           | C2                        | 222                   | 8.40           |

## BS5837:2012 TREE SCHEDULE

### SITE

Brough Park Leisure Centre

### CLIENT

SPELLER METCALFE MALVERN LTD

### DATE

4th May 2023

### REFERENCE

Arbtech TS 01

| Tree No. | Common Name     | Botanical Name      | Height (m)   | Stem Dia (mm) | Crown Spread (m) |   |   |   | Height of Crown Clearance (m) | Age Class    | Phys Con | Struc Con | Estimated remaining life | Additional notes                                                                                                                      | Preliminary recommendations | BS5837 Retention Category | RPA (m <sup>2</sup> ) | RPA Radius (m) |
|----------|-----------------|---------------------|--------------|---------------|------------------|---|---|---|-------------------------------|--------------|----------|-----------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------|-----------------------|----------------|
|          |                 |                     |              |               | N                | E | S | W |                               |              |          |           |                          |                                                                                                                                       |                             |                           |                       |                |
| T25      | Common beech    | Fagus sylvatica     | Mature       | 15            | 6                | 4 | 5 | 4 | 3                             | Mature       | Good     | Good      | Long (>40 years)         | Main stem forks at approx. 1.5m and again at 2m from ground level to form 3no dominant stems. Fork unions show evidence of inclusion. | 0                           | B1, 2                     | 254                   | 9.00           |
| T26      | Common beech    | Fagus sylvatica     | Mature       | 9             | 5                | 5 | 4 | 6 | 2                             | Mature       | Good     | Good      | Long (>40 years)         | No notable features.                                                                                                                  | 0                           | B1, 2                     | 113                   | 6.00           |
| T27      | Sycamore        | Acer pseudoplatanus | Mature       | 15            | 7                | 9 | 7 | 7 | 3                             | Mature       | Good     | Good      | Long (>40 years)         | Evidence of historic pruning works to main stem with wounds now occluding. Small to medium diameter dead wood within crown.           | 0                           | A1, 2                     | 523                   | 12.90          |
| T28      | Sycamore        | Acer pseudoplatanus | Mature       | 15            | 6                | 6 | 7 | 5 | 3                             | Mature       | Good     | Good      | Long (>40 years)         | No notable features.                                                                                                                  | 0                           | B1, 2                     | 254                   | 9.00           |
| T29      | Common beech    | Fagus sylvatica     | Mature       | 11            | 6                | 5 | 6 | 6 | 2.5                           | Mature       | Good     | Good      | Long (>40 years)         | No notable features.                                                                                                                  | 0                           | B1, 2                     | 150                   | 6.90           |
| T30      | Pedunculate oak | Quercus robur       | Semi-mature  | 5             | 2.5              | 3 | 3 | 3 | 2                             | Semi-mature  | Good     | Good      | Long (>40 years)         | No notable features.                                                                                                                  | 0                           | B1, 2                     | 41                    | 3.60           |
| T31      | Common beech    | Fagus sylvatica     | Mature       | 6             | 5                | 4 | 4 | 4 | 2                             | Mature       | Good     | Good      | Long (>40 years)         | No notable features.                                                                                                                  | 0                           | B1, 2                     | 113                   | 6.00           |
| T32      | Sycamore        | Acer pseudoplatanus | Early-mature | 7             | 4                | 5 | 4 | 4 | 2                             | Early-mature | Good     | Good      | Medium (20 to 40 years)  | No notable features.                                                                                                                  | 0                           | B1, 2                     | 113                   | 6.00           |

## BS5837:2012 TREE SCHEDULE

### SITE

Brough Park Leisure Centre

### CLIENT

SPELLER METCALFE MALVERN LTD

### DATE

4th May 2023

### REFERENCE

Arbtech TS 01

| Tree No. | Common Name                                                    | Botanical Name                                                            | Height (m)   | Stem Dia (mm) | Crown Spread (m) |   |   |   | Height of Crown Clearance (m) | Age Class    | Phys Con | Struc Con | Estimated remaining life | Additional notes                                                                                                                                                                                                   | Preliminary recommendations | BS5837 Retention Category | RPA (m <sup>2</sup> ) | RPA Radius (m) |
|----------|----------------------------------------------------------------|---------------------------------------------------------------------------|--------------|---------------|------------------|---|---|---|-------------------------------|--------------|----------|-----------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------|-----------------------|----------------|
|          |                                                                |                                                                           |              |               | N                | E | S | W |                               |              |          |           |                          |                                                                                                                                                                                                                    |                             |                           |                       |                |
| G1       | Common hawthorn, Common holly, Common lime                     | Crataegus monogyna, Ilex aquifolium, Tilia x europea                      | Mature       | 14            | 5                | 5 | 5 | 5 | 1                             | Mature       | Good     | Good      | Medium (20 to 40 years)  | Group sharing a combined canopy. Trees heavily clad in ivy from base into structural canopy. Small to medium diameter dead wood throughout canopy. Measurements are indicative of largest dimensions within group. | 0                           | B1, 2                     | 222                   | 8.40           |
| G2       | Sycamore, Common holly, Cherry laurel, Pedunculate oak, Willow | Acer pseudoplatanus, Ilex aquifolium, Prunus laurocerasus, Quercus robur, | Early-mature | 11            | 5                | 5 | 5 | 5 | 1                             | Early-mature | Good     | Good      | Medium (20 to 40 years)  | Group sharing a combined canopy with lower storey scrub. Measurements are indicative of largest dimensions within group.                                                                                           | 0                           | B1, 2                     | 92                    | 5.40           |
| G3       | Silver birch, Common ash, Cherry laurel                        | Betula pendula, Fraxinus excelsior, Prunus laurocerasus                   | Early-mature | 8             | 3                | 3 | 3 | 3 | 0                             | Early-mature | Good     | Good      | Medium (20 to 40 years)  | Group comprised of 2no trees ( Birch and ash) with lower storey laurel. Measurements are indicative of largest dimensions within group. No notable features.                                                       | 0                           | B1, 2                     | 41                    | 3.60           |
| G4       | Sycamore                                                       | Acer pseudoplatanus                                                       | Mature       | 15            | 4                | 4 | 4 | 4 | 1                             | Mature       | Good     | Good      | Medium (20 to 40 years)  | Group comprised of sycamore. Measurements are indicative of largest dimensions within group.                                                                                                                       | 0                           | B1, 2                     | 290                   | 9.60           |

## Appendix 3: Contact Details

| Name | Position                  | Company                 | Contact                                                                   |
|------|---------------------------|-------------------------|---------------------------------------------------------------------------|
|      | Client                    |                         |                                                                           |
|      | Agent / Project Manager   |                         |                                                                           |
|      | Tree Officer              |                         |                                                                           |
|      | Arboricultural Consultant | Arbtech Consulting Ltd. | 01244 661170<br><a href="https://arbtech.co.uk">https://arbtech.co.uk</a> |
|      | Site Manager              |                         |                                                                           |
|      | Main contractor           |                         |                                                                           |
|      |                           |                         |                                                                           |
|      |                           |                         |                                                                           |
|      |                           |                         |                                                                           |

## Document Production Record

| Document number | Editor          | Signature                                                                         | Position   | Issue number | Date     |
|-----------------|-----------------|-----------------------------------------------------------------------------------|------------|--------------|----------|
| Arbtech AIA 01  | Matthew Edwards |  | Consultant | 01           | 28/03/24 |

### Limitations

Arbtech Consulting Ltd has prepared this Report for the sole use of the above-named Client/Agent in accordance with our terms of business, under which our services were performed. No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by us. This Report may not be relied upon by any other party without the prior and express written agreement of Arbtech Consulting Ltd. The assessments made assume that the sites and facilities will continue to be used for their current purpose without significant change. The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from third parties has not been independently verified by Arbtech Consulting Ltd.

### Copyright

© This Report is the copyright of Arbtech Consulting Ltd. Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.