Ridings Forestry

2023

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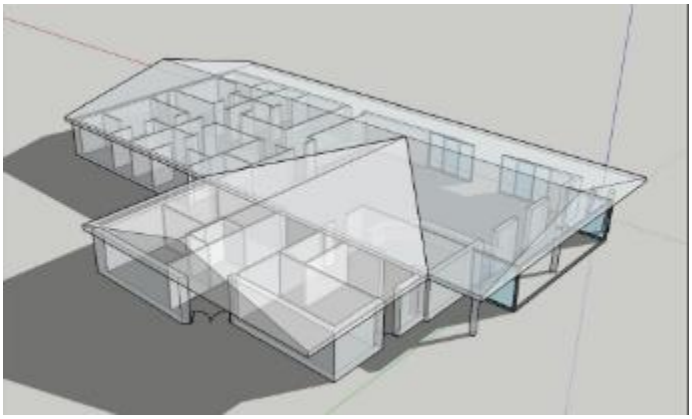
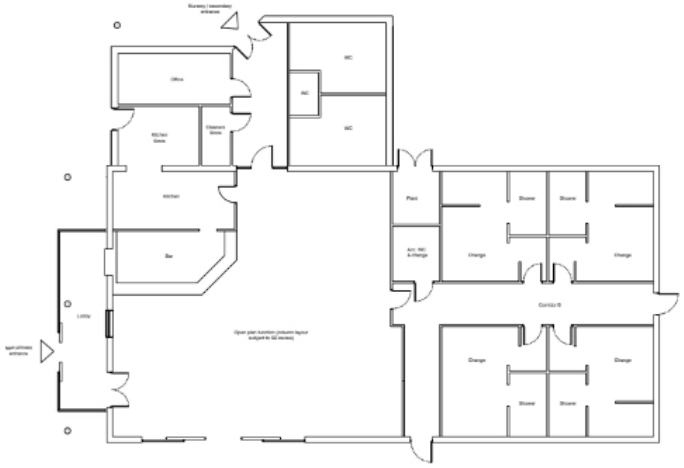
BS5837 2012 TREE SURVEY

Plan Architecture

South Cave Sports Pavilion, Bull Field, South Cave, East Riding of Yorkshire.





Ridings Forestry

UK LTD

Wednesday, March 1, 2023

Instructions
This tree survey gives recommendations and guidance on the principles to be applied to achieve a satisfactory juxtaposition of trees, including shrubs, hedges and hedgerows when building works are proposed. It follows, in sequence, the stages of planning and implementing the provisions which are essential to allow the development to be integrated with the trees.

A tree survey is required to be carried out in accordance with BS5837:2012. The survey is to include a tree schedule for all trees that are shown on the attached drawings, an impact assessment and a method statement for protecting the trees during the construction period.

1) Introduction
This report provides information in accordance with recommendations given in British Standard 5837:2012 for a proposed extension to the existing South Cave Sports Pavilion and resurfacing of driveway and car park, Bull Field, South Cave, East Riding of Yorkshire.

3) Date of Inspection
The trees were inspected on 15/02/23 Weather conditions were sunny.

4) Historical/Background Information

An extension is proposed to the existing South Cave Sports Pavilion and resurfacing of driveway and car park, Bull Field, South Cave, East Riding of Yorkshire. The area is within the South Cave Conservation Area and is covered by the Tree Preservation Order (TPO) detailed below.

5)Survey Data Collected

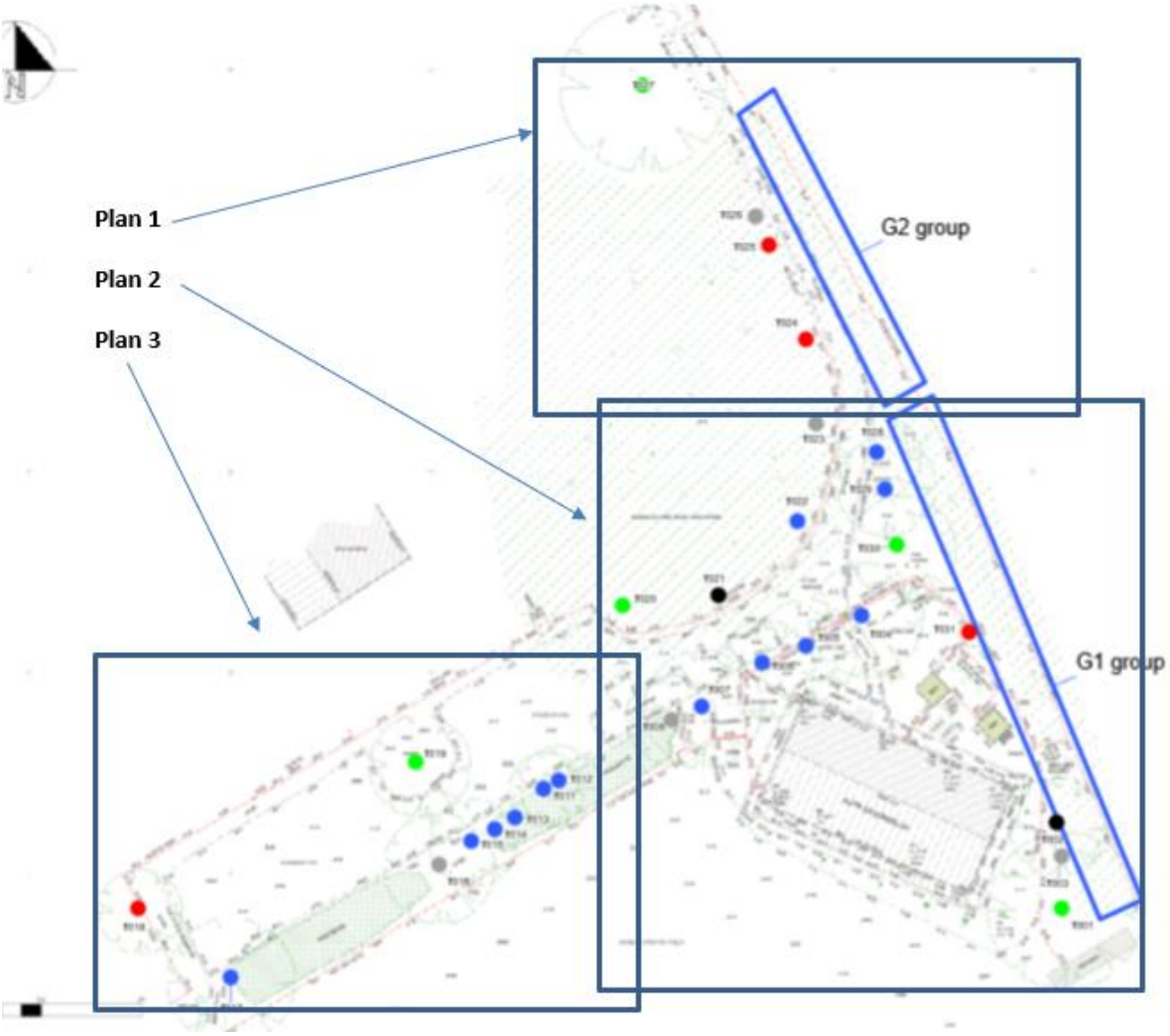
Tree ref
Species
Height
DBH
Crown Spread N S E W
Height from Ground to Crown
Age Class
Physical Condition
Structural Condition
Other Comments
Management Recommendations
Safe Life Expectancy

6) Wildlife & Countryside Act

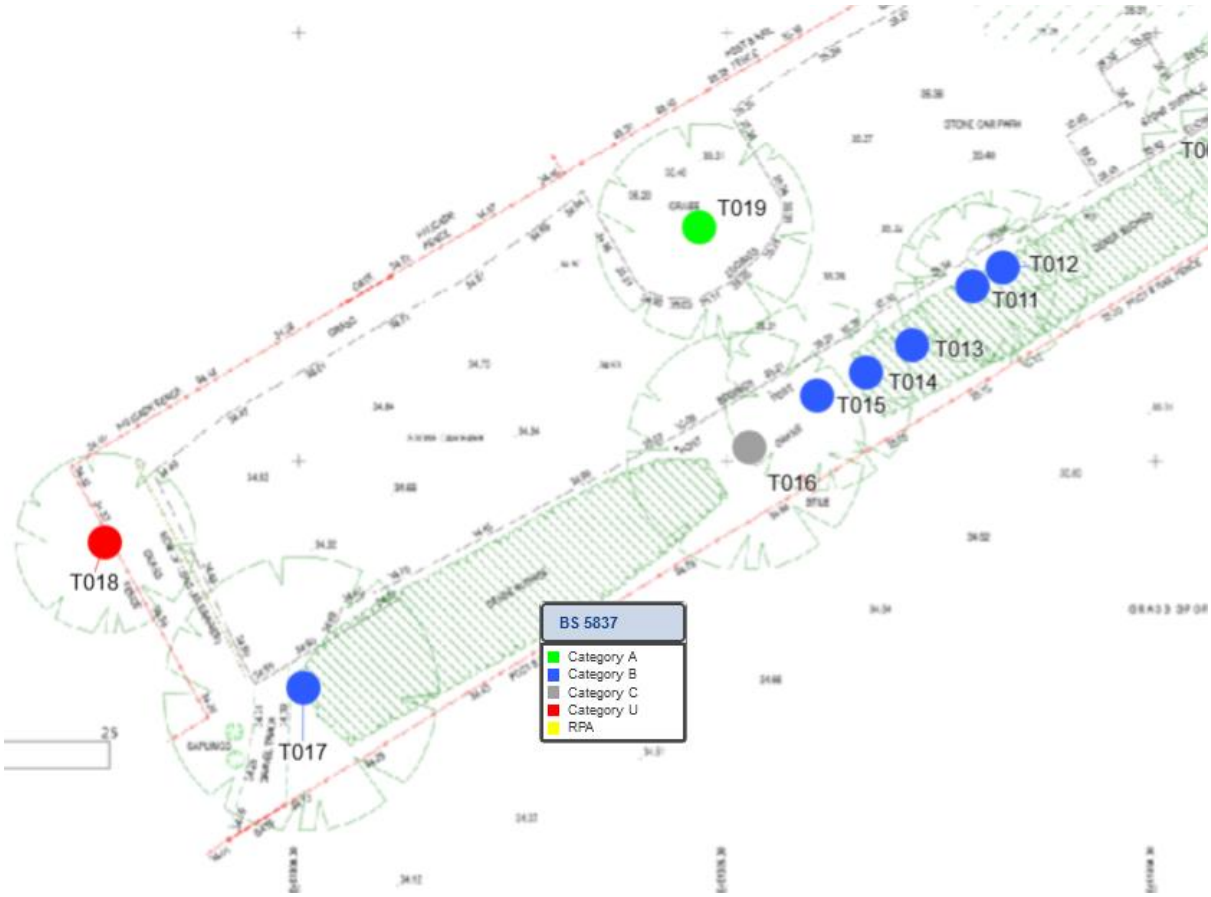
Birds and Bats are protected by the above act. No roosts or nests were noted during the tree survey. However, should anything be noted when any works are to undertaken Natural England must be contacted.

7) Development Report

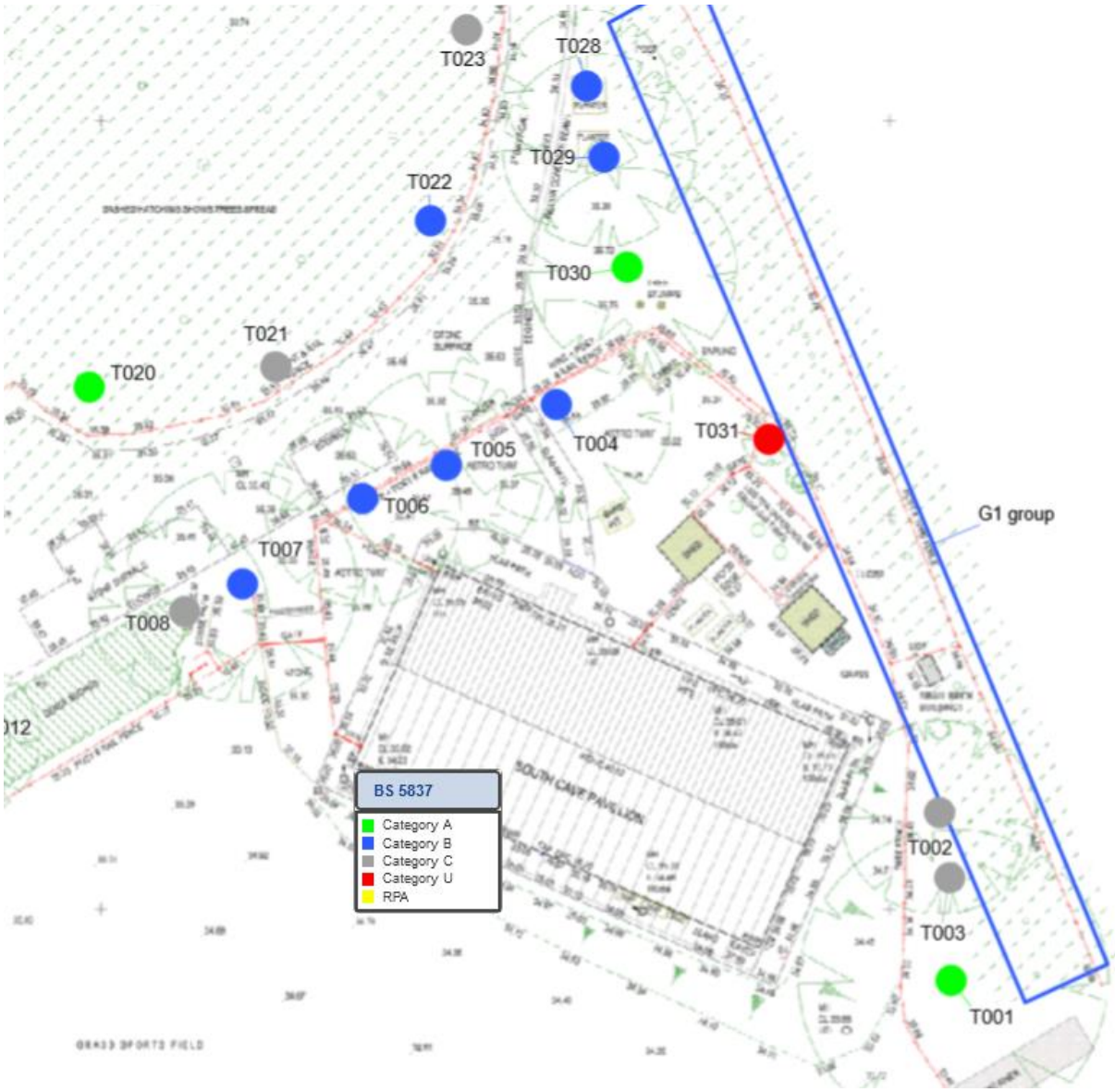
The locations of the trees and their grades in relation to BS 5837 2012 are shown on the plan below.



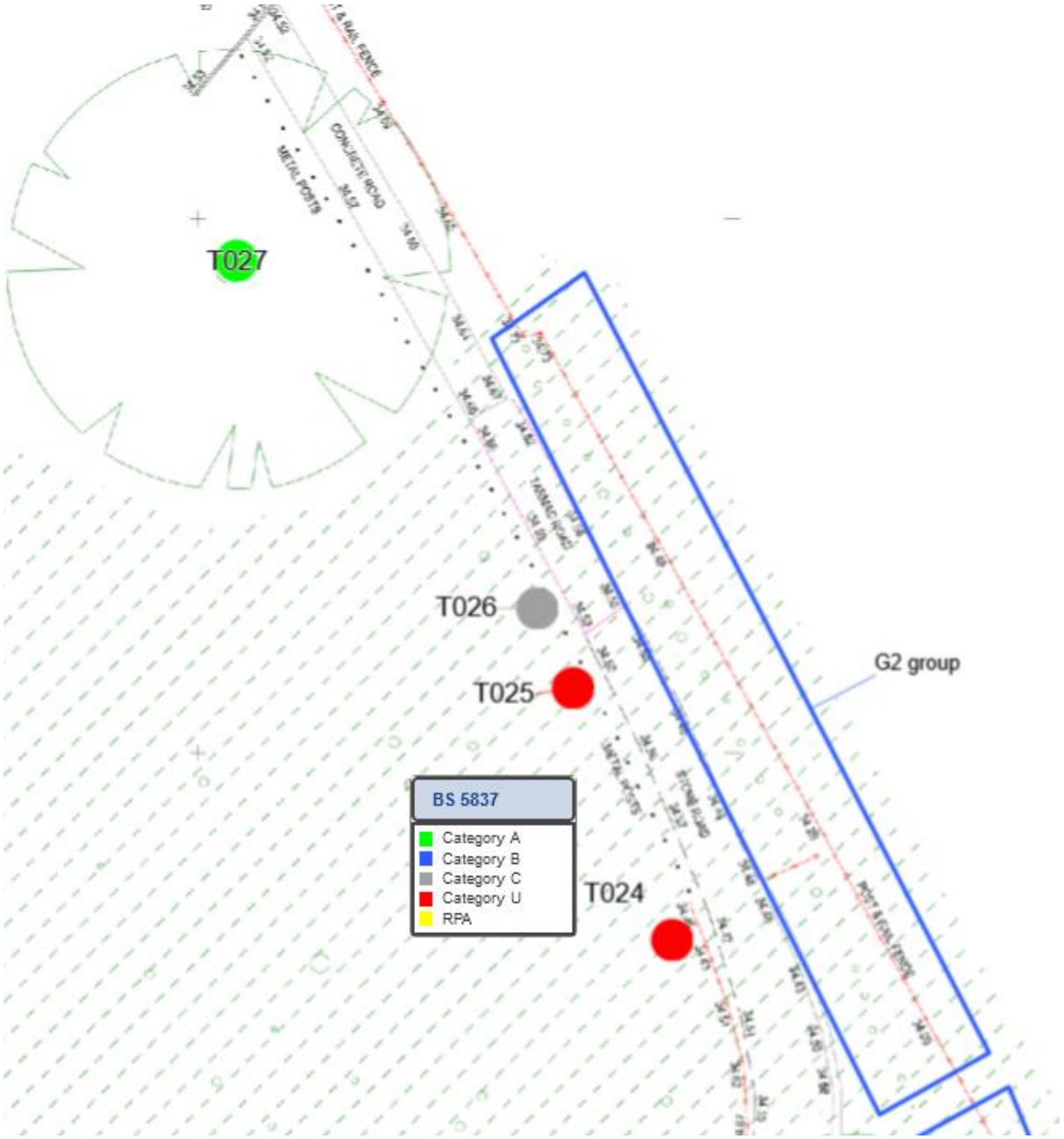
Plan 3


T019
T012
T011
T013
T014
T015
T016
T018
T017
BS 5837
Category A
Category B
Category C
Category U
RPA

Plan 2


T023
T028
T029
T022
T030
T021
T020
T031
T004
T005
T006
G1 group
T007
T008
BS 5837
Category A
Category B
Category C
Category U
RPA
T002
T003
T001

Plan 1


T027
T026
T025
T024
G2 group
BS 5837
Category A
Category B
Category C
Category U
RPA

7.1.) Tree Constraints Plan

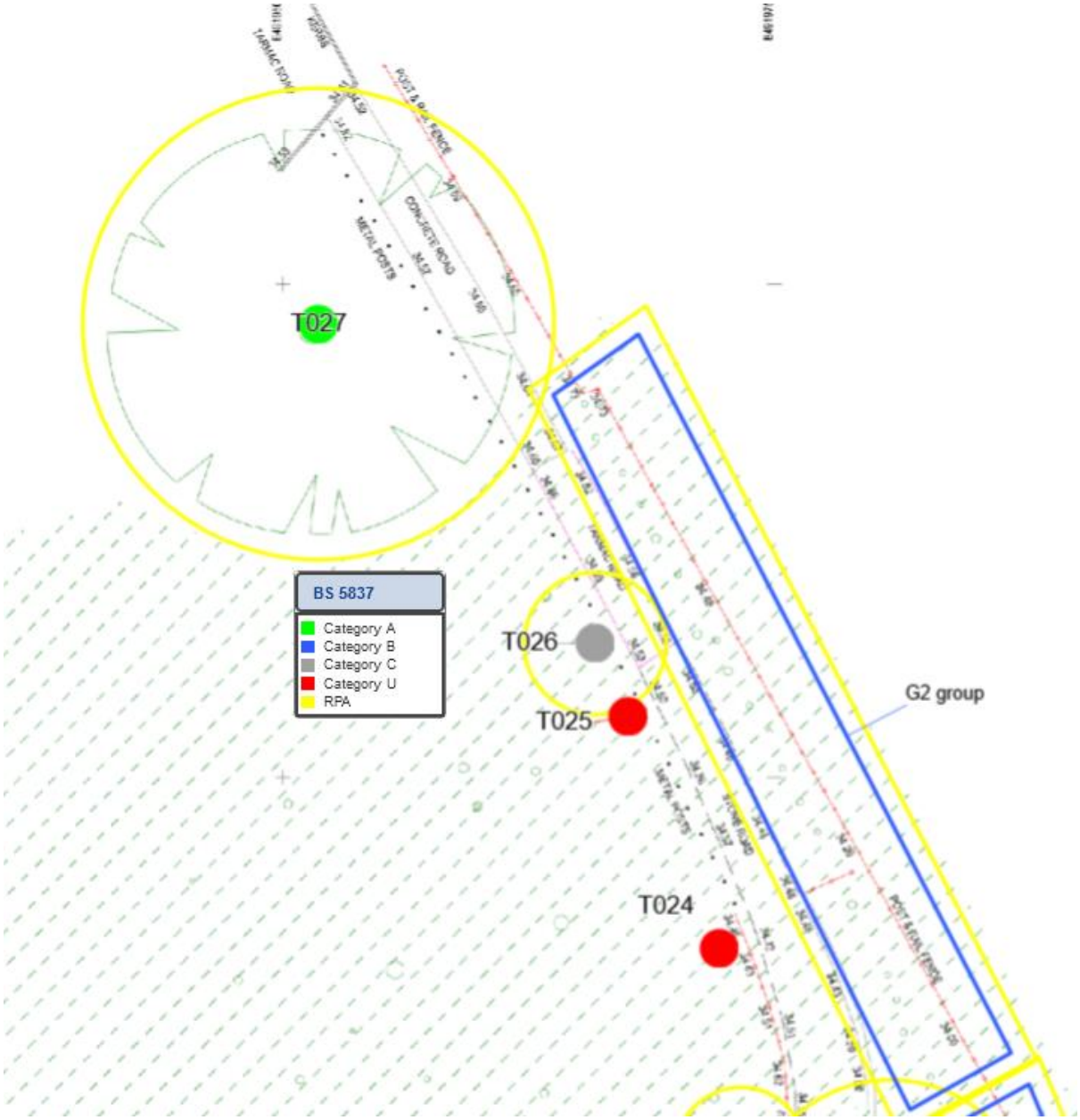
All survey data and work recommendations can be found in Appendix B of this report.

7.2) Root Protection Areas

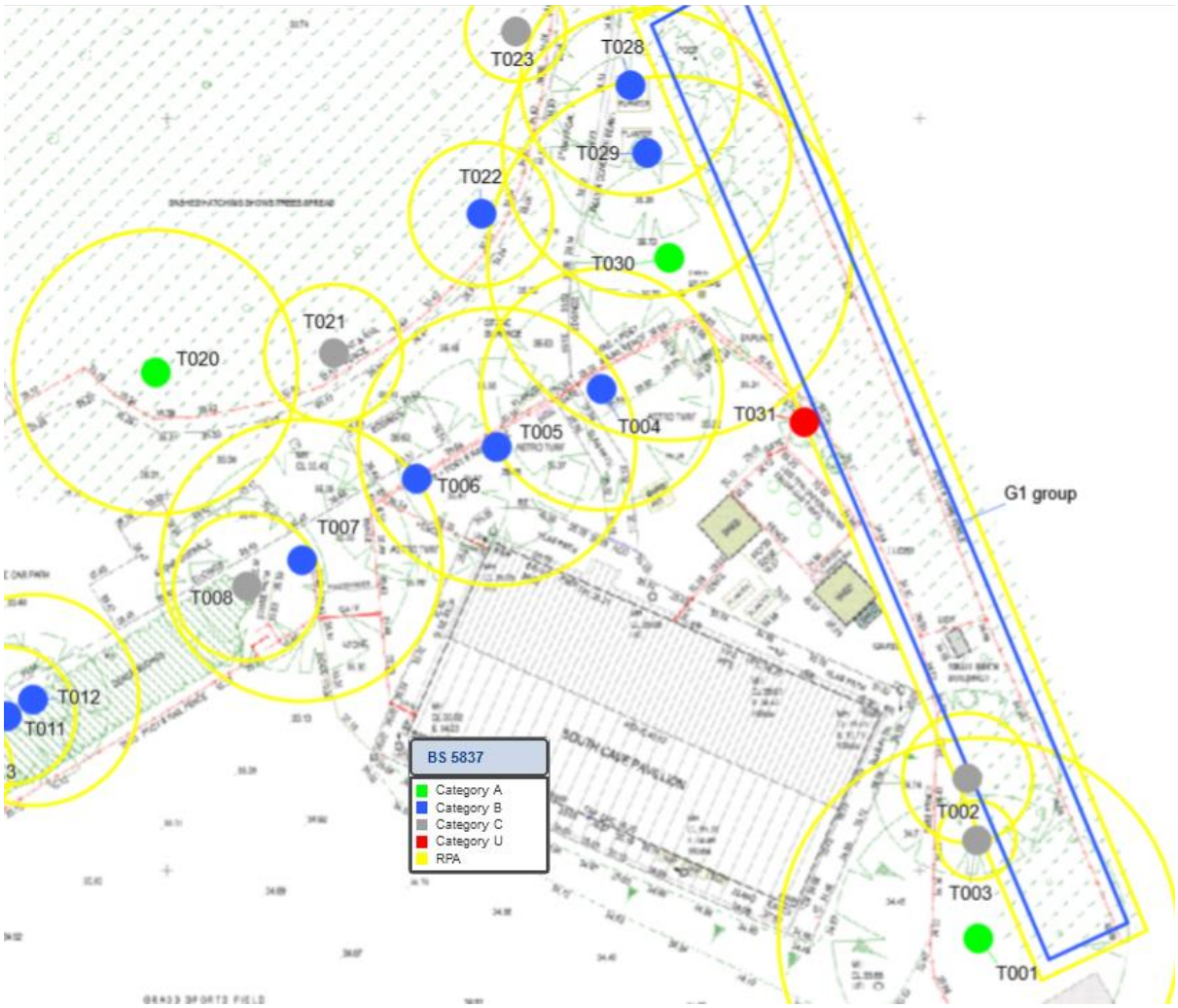
Please see plans below for Root Protection Areas.

The root protection distances for the trees have been included in the survey schedule. Details of the fencing are given in appendix A.

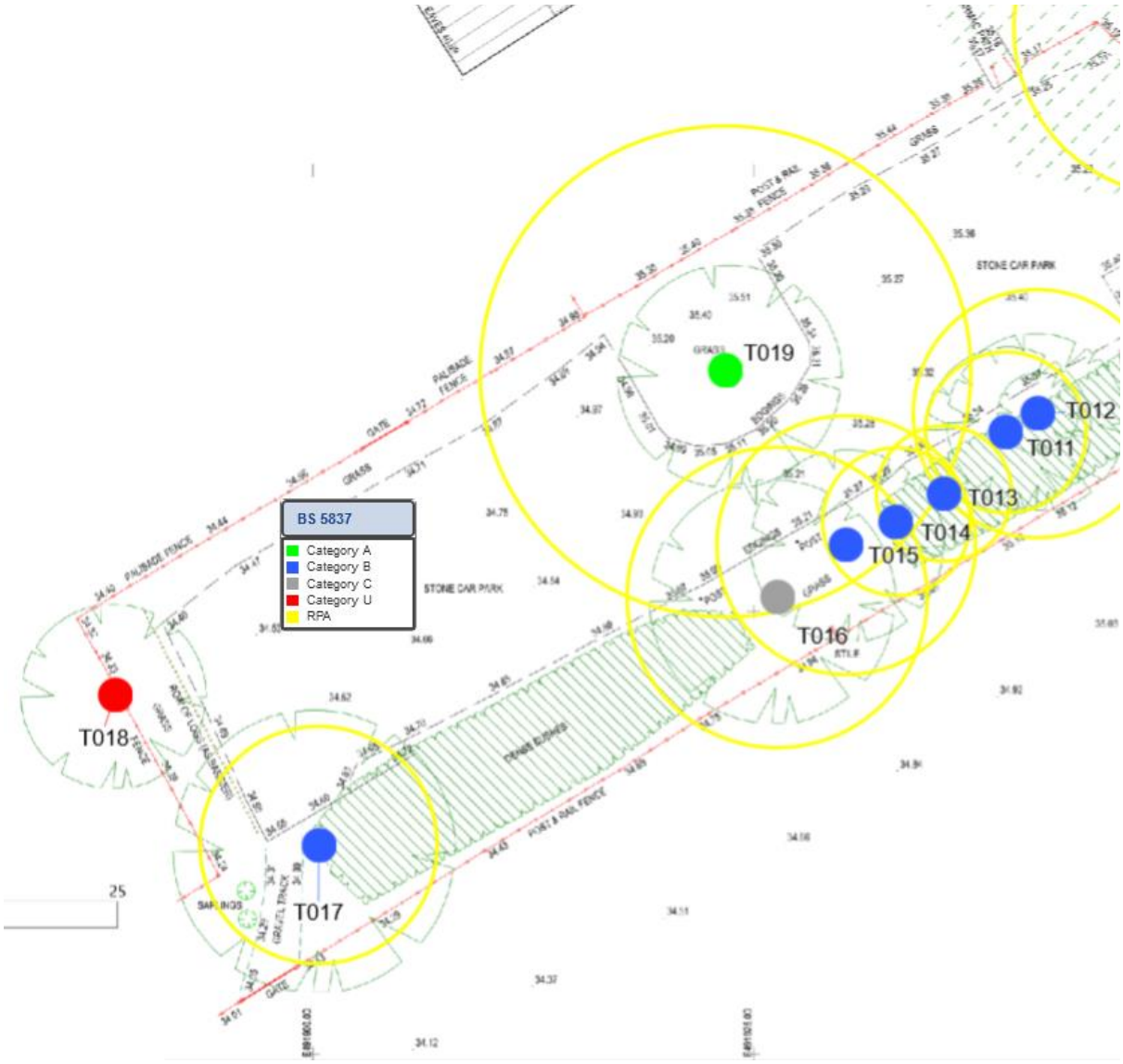
Plan1



Plan 2


T023
T028
T029
T022
T030
T021
T020
T004
T031
T005
T006
G1 group
T007
T008
T012
T011
BS 5837
Category A
Category B
Category C
Category U
RPA
SOUTH CAGE PAVILION
T002
T003
T001

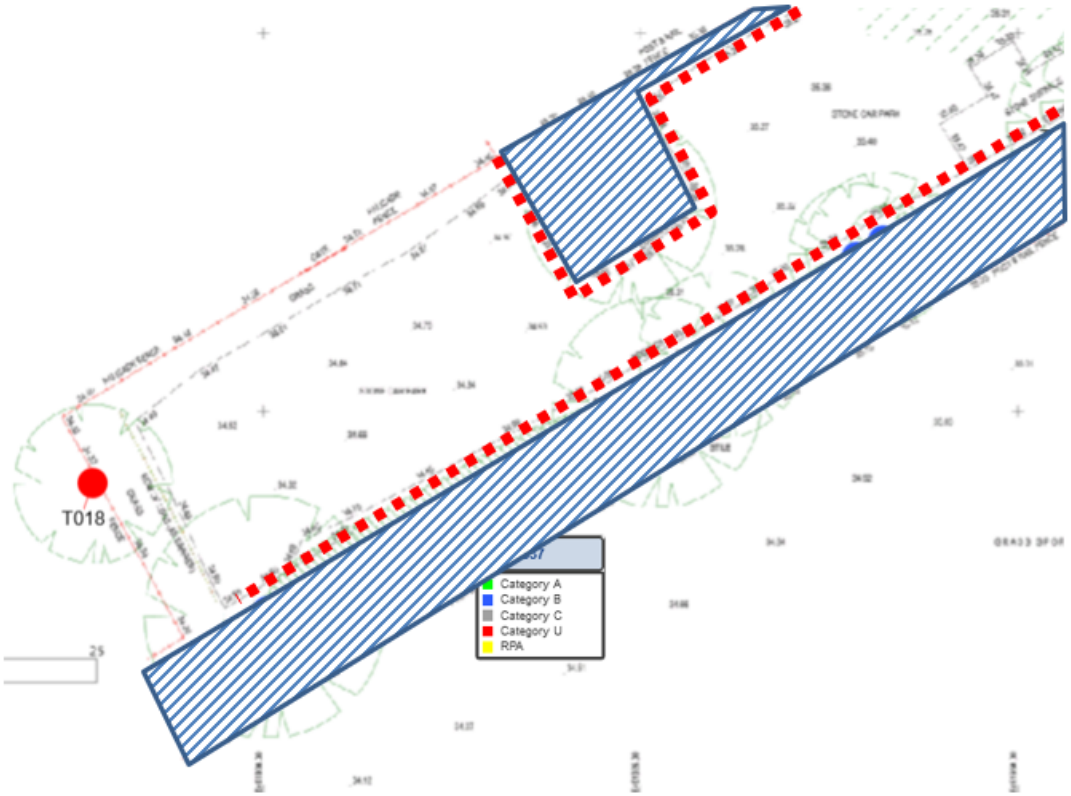
Plan 3


BS 5837
Category A
Category B
Category C
Category U
RPA
T011
T012
T013
T014
T015
T016
T017
T018
T019
STONE CAR PARK
25

7.3) Tree Protection Plan

Tree Protection Class 1 Fencing should be erected as detailed in the plan below. See Appendix A for fencing details. Fencing should remain in place for the duration of the build.

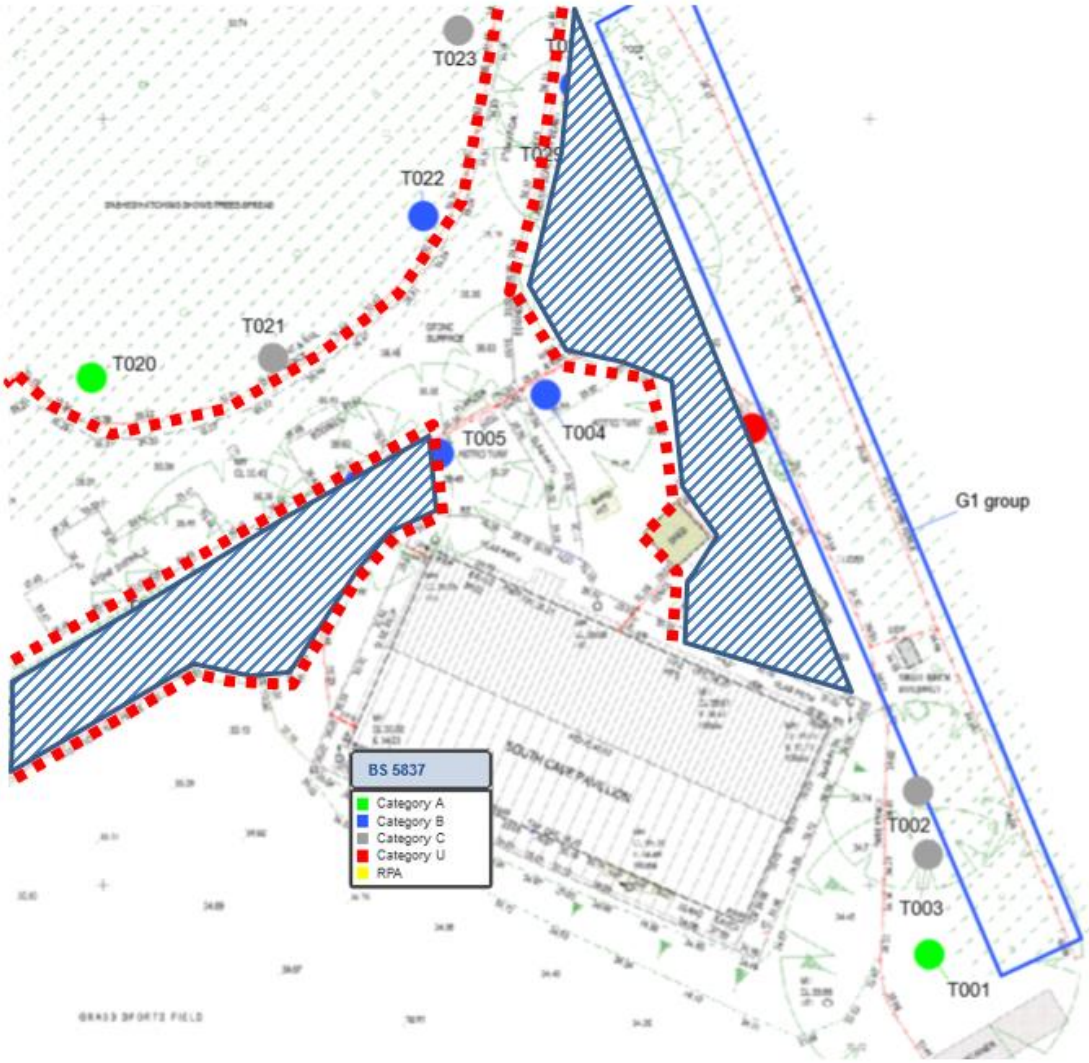
Tree Protection Plan 3



Class 2 Fencing

Machinery Exclusion/ No Dig Zone

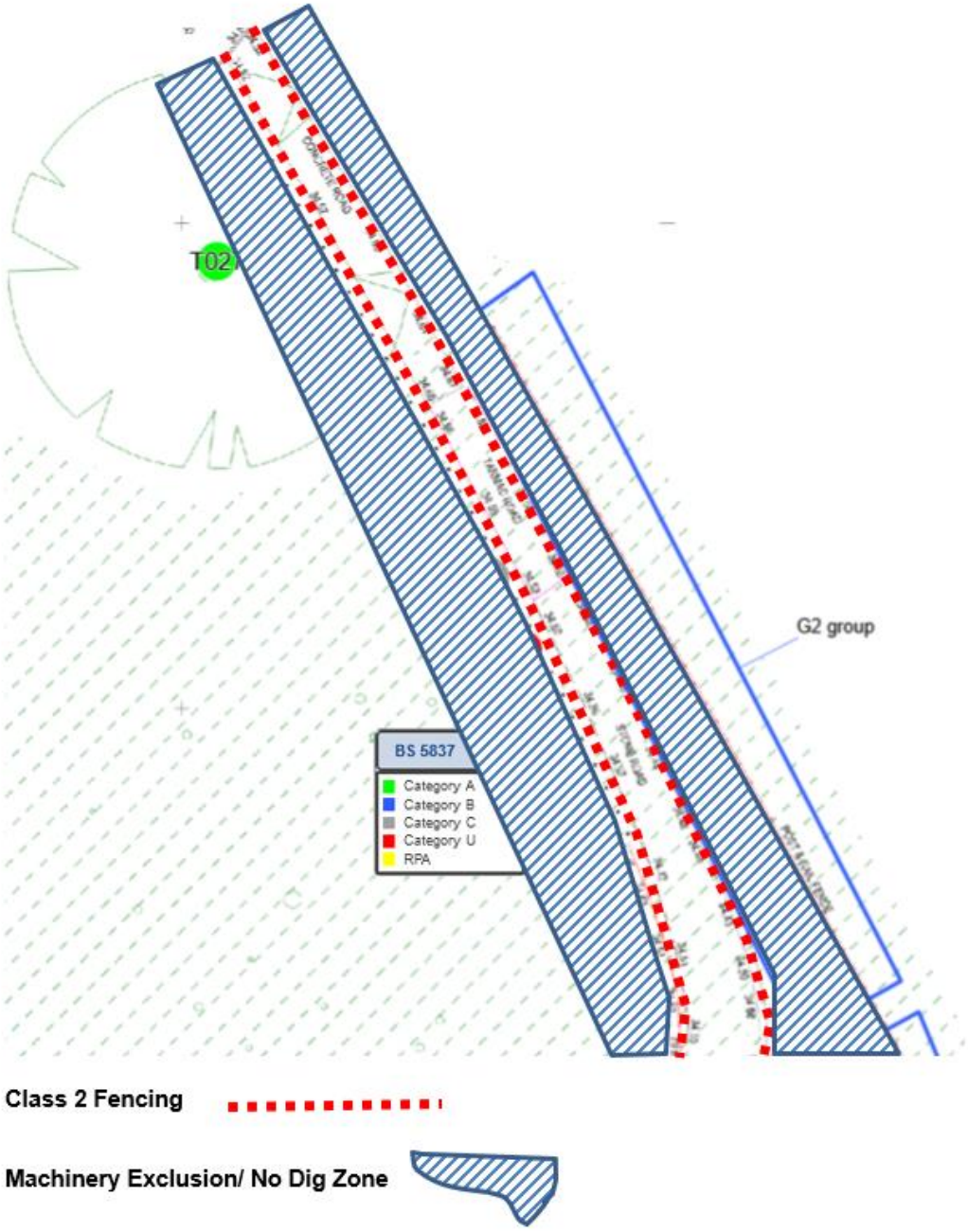
Tree Protection Plan 2



Class 2 Fencing

Machinery Exclusion/ No Dig Zone

Tree Protection Plan1



Class 2 Fencing

Machinery Exclusion/ No Dig Zone

8) Arboricultural Implications Assessment

8.1) Impact on trees

The area around the South Cave Pavilion and car park can best be described as a heavily wooded area. The area is protected by Conservation Area legislation and a Tree Preservation Order File Ref:268 (East Riding of Yorkshire Council).

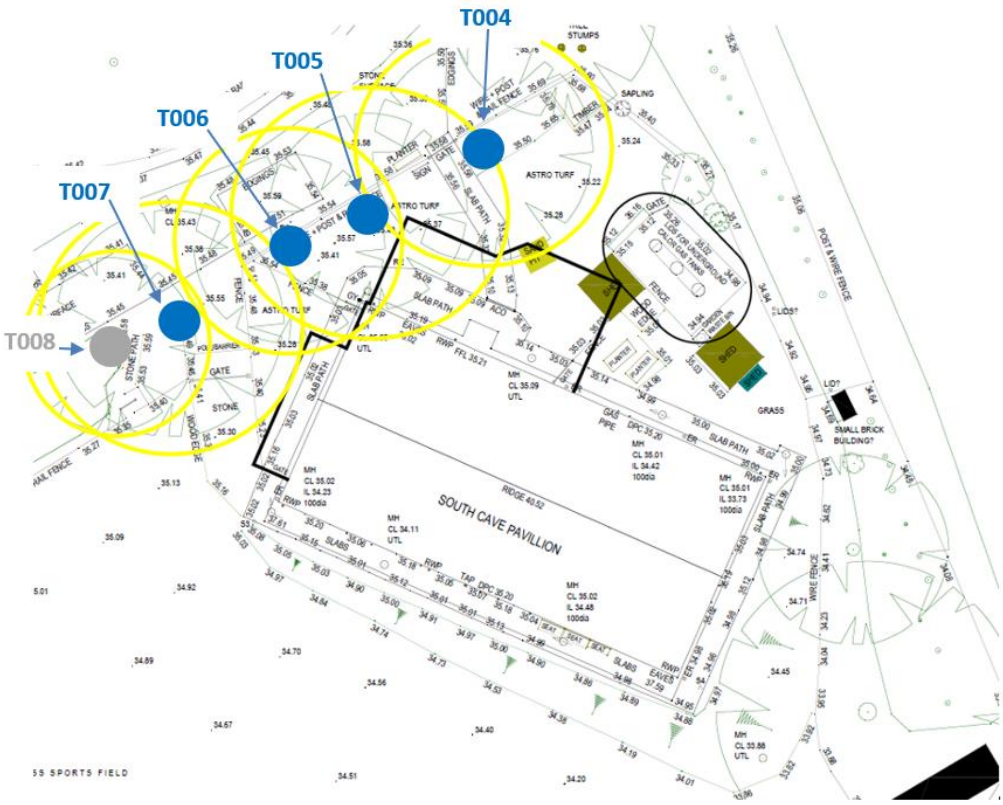
The majority of trees within this area are of an even age and have been classed as mature. There are a number of specimen trees within this area. Some have been classed as Grade A trees, others have been classed as Grade B trees. The trees that have been classed as Grade B trees have been downgraded due to their impaired condition. Please see below for examples of Grade A trees.

T030 Beech

T001 Beech

T003 Beech

The new extension to the north and west of the existing building is shown on the plan below.



T004, T005, T006, T007 & T008 are the closest to proposed building works regarding the pavilion. The extension to the north of the pavilion directly effects the root protection areas (RPA) of T004, T005 and T006. The RPA of T005 is the most compromised by the proposed development.

Access is clearly an issue regarding these trees. Any foundation works would be difficult to undertake without some damage occurring to roots of all the trees listed above. T005 is undoubtedly too close to the proposed extension. A large percentage of the RPA is compromised ,also in my opinion, the tree would be over domineering and cause problems with leaf litter etc. Another option for any building works within the RPA would be to utilize piling systems There are two types of piling systems that can be employed within the RPA. One is Micro piling the other is Screw Piling. Micro piling involves hitting the piles into the ground whilst screw piles are rotated into the ground using a handheld or excavator mounted torque head. Installation occurs at a constant speed, inducing no vibration and requiring no pre-auguring. A screw pile displaces a comparatively small amount of soil & tree roots compared to a traditional micro pile. The helices attached to the screw pile shaft are deliberately made from thin steel plate, with a blunt protruding edge to ensure that where possible, roots are moved out of the way during installation rather than severing them. The pile shaft is considerable smaller than that of a micro pile so again, displacement of soil and tree roots is minimised. Should a micro pile encounter a root, the root would be severed.

Clearly there is no way that a pile can be installed through an existing root system without causing some damage, however it is key to the health of the tree to minimise this effect as much as possible. As previously discussed, micro piling requires the removal of all material in the position of the pile, including any tree roots encountered. Typically screw piles are used in combination with a cast concrete ground beam system. This system is generally flexible enough to allow pile to be adjusted on site if any large tree roots are encountered and need to be avoided. Access into the area and working space are extremely tight. Ground protection for pedestrians and plant could be employed to mitigate soil compaction and direct damage to tree roots, however, in my opinion T004 and T005 would have to be removed to facilitate this development. Ground protection and protective fencing would have to be in place for T030 and T006. T004 and T005 are shown below.

T004 T005

T004 and T005 have been classed as Grade B trees. These are trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality. The area has a woodland feel. However, the trees throughout this area, including the adjacent leisure facility, are even aged and have mostly been classed as mature. The loss of these to trees could facilitate this development and could also introduce newly planted trees into the area to diversify the overall age class thus, promoting the principles of continuous cover forestry. If assessing the area as a woodland it would be classed as high canopy. There is no understorey, no shrub layer and very little field layer. The trees throughout the whole area have received very little management.

The proposed extension to the west, skirts the RPA's of T005, T006 and T007. This extension is much smaller than the northern extension. Access could be gained form the south, and if T005 is removed access could be gained from the north. Protective fencing and ground

protection for pedestrian and plant would still have to be employed to protect the roots of T006 and T007 from soil compaction and direct damage.

T008 has been classed as Grade C with poor overall physiological and structural condition.. See Picture below.

T008 Sycamore

No details regarding the construction of foundations have been provided. However, hand digging or micro piles, as discussed earlier, could be employed. Hand digging would avoid damage to the protective bark covering larger roots. Roots, whilst exposed, should be wrapped in dry, clean hessian sacking to prevent desiccation and to protect from rapid temperature changes. Roots smaller than 25 mm diameter may be pruned back, preferably to a side branch, using a proprietary cutting tool such as bypass secateurs or handsaws. Roots larger than 25 mm should only be severed following consultation with an arboriculturist, as they may be essential to the tree's health and stability. Prior to backfilling, any hessian wrapping should be removed and retained roots should be surrounded with sharp sand (builders' sand should not be used because of its high salt content which is toxic to tree roots), or other loose granular fill, before soil or other material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.

The resurfacing of the driveway and car park should be undertaken with extreme care and diligence. If the following guidelines are adhered to the resurfacing of the area should not be detrimental to tree health.

Roots, belonging to trees growing adjacent to hard surfacing, such as concrete, tarmac or stone, are generally present underneath the hard surface layer. The use of heavy machinery within the root protection areas can cause damage to tree roots through compaction and direct damage. If the existing surface is left intact root damage, generally, does not occur. The potential for damage occurring can be minimised further by using plant with a long reach to scrape or lift existing surface to a achieve a satisfactory foundation layer for the new surface, without compromising roots. No plant or pedestrian movement should occur without ground protection, or the new surface being laid.

Concrete edging can be found around the existing car park. Please see picture below.

Ideally, existing edgings, footings and surfaces should remain in place. Existing surfaces could be sympathetically levelled and the overall surface of the car park and entranceway raised. This would avoid damage to tree rooting systems.
T028 and T029 have been classed as Grade B trees. These two trees are on the cusp of being classed as over mature. There are some cavities within the branch structures of both trees and could be a habitat for bats. Unfortunately, they have had planters built around the base of both trees. Please see picture below.

This practice is highly detrimental to tree health and stability causing the rot around the base of the tree.

The loss of T004 and T005 could be mitigated by producing a management plan for the whole area coupled with a comprehensive planting programme to address the even age structure of the wooded area. Trees within G1 and G2 have been planted very close together. A number of trees are being suppressed, some are heavily clad in Ivy and Ash dieback is present. If the age structure of trees on site are not altered, then this valuable amenity will be lost to future generations.

8.2) The construction exclusion zone: barriers and ground protection

All trees which are being retained on site should be protected by barriers and/or ground protection, as recommended. Vertical barriers should be erected, and ground protection installed before any materials or machinery is brought onto the site and before any demolition, development or stripping of soil commences. Once erected, barriers and ground protection should be regarded as sacrosanct, and should not be removed or altered without prior recommendation by an arboriculturist and approval of the local planning authority.

8.3) Barriers

Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s). On all sites, special attention should be paid to ensuring that barriers remain rigid and complete.

In most cases, barriers should consist of a scaffold framework in accordance with Figure 2 comprising a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3 m. Onto this, weld mesh panels should be securely fixed with wire or scaffold clamps. Weld mesh panels on rubber or concrete feet are not resistant to impact and should not be used.

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NOTE the above is preferred because it is readily available, resistant to impact, can be re-used and enables inspection of the protected area.

GROUND PROCTECTION ERECTED ON SITE TO PROTECT TREES SHOULD BE CLEARLY SIGNED AS BELOW.

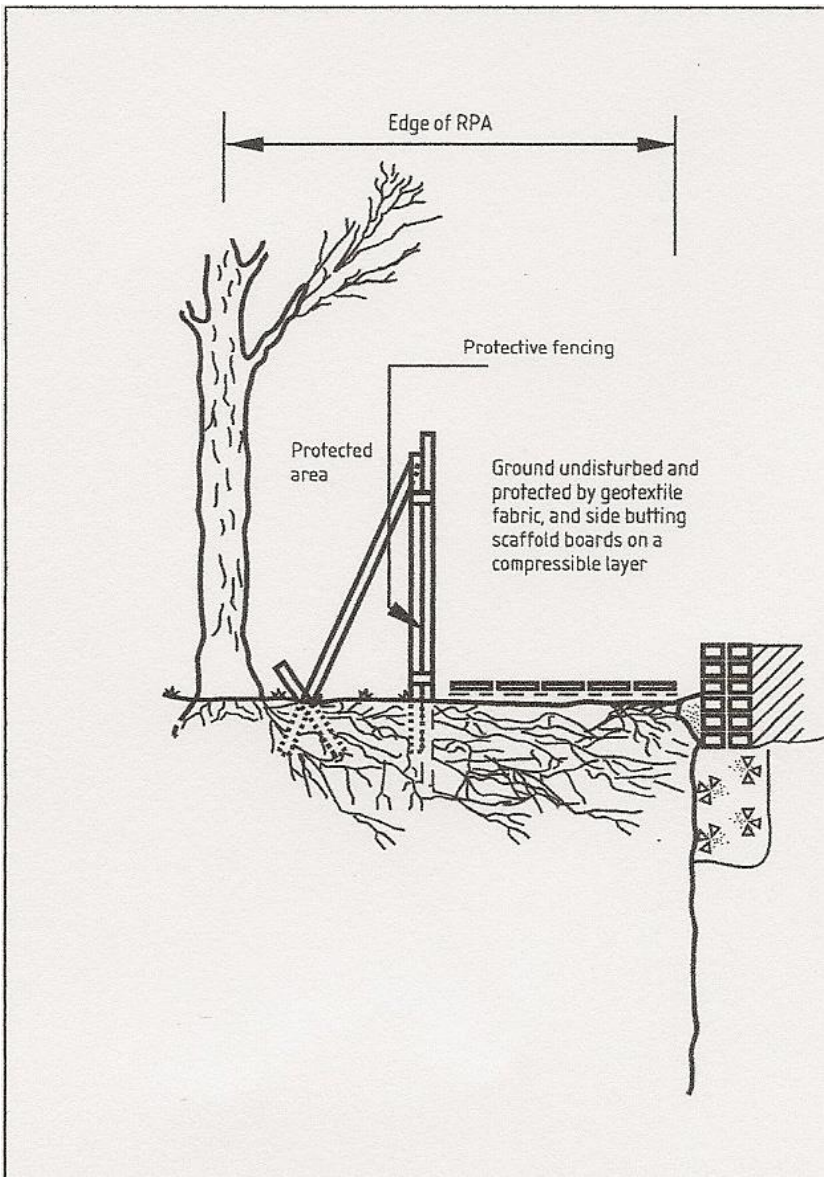
8.4) Access and Space for Construction
All building materials will be stored on hard standing or 15 metres away from any retained trees.

8.5) Services
No details of services have been provided.

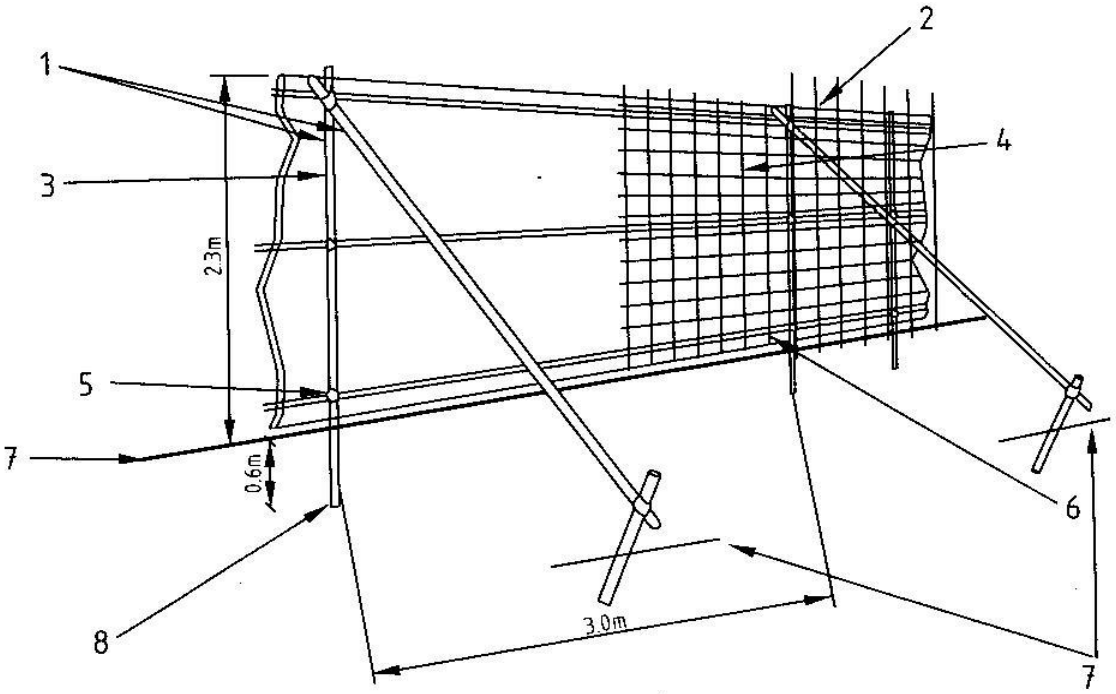
Appendix A Tree Protection

Tree Protection Fencing

Class 1 Fencing



Class 2 Fencing



1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6 m driven into the ground

Figure 2 — Protective barrier

Appendix B
Tree Survey

Tree Work Recommendations