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PRE-DEVELOPMENT ARBORICULTURAL IMPACT APPRAISAL AND REPORT

ON TREES AT

BARTON SCHOOL
BARROW ROAD
BARTON upon HUMBER
NORTH LINCOLNSHIRE
DN18 6DA

CLIENT

NEW OPTIONS LTD

Ref: LTS/13023/New Options Ltd

Directors - John F Robinson ND Arb (BTEC) T James Robinson
Printed on Recycled paper

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APPENDICES

1.0 INTRODUCTION

1.1 Purpose of the report

This report is intended for use by my client in connection with a planning application to construct a new multi-use games area (MUGA) in the existing outdoor play area of the school. It shall not apply to any other use or purpose.

1.2 Terms of reference

I am instructed to prepare the report by my client -
New Options Ltd, Turnpike Gatehouse, Alcester Heath, Alcester B49 5JG.
The instruction was issued in the form of an electronic communication dated 5 August 2013 by Richard Cooke, Head of Corporate Development.

1.3 Documents received

My client has authorised the issue of copies of the existing and proposed site layouts by Baily Garner, Birmingham [ref. Job No. 26012, Drawing Nos. (P) 01 Revision A and (P) 100 Revision A] to assist in the preparation of this report.

1.4 Scope of the report

My client has requested that I consider the following points when preparing the survey and report;

1 Specifically inspect and assess a small triangular area of woodland copse growing in the location of the MUGA.
2 Comment on its constituent species, history, condition and suitability for retention.
3 Provide a report complying with BS5837:2012 'Trees in relation to design, demolition and construction - Recommendations' which gives management recommendations to assist in mitigating any adverse effects of the development, including a tree protection plan and an arboricultural method statement.

1.5 Limitations

The report is limited to providing a record of a single visual inspection and arboricultural impact appraisal for the copse area within the site. The inspection was made from ground level. No other tests have been conducted, either by myself or by others under my direction, nor have I recovered any samples for testing by a third party.

2.0 SITE DESCRIPTION AND PROTECTED STATUS OF TREES

2.1 Site description

The site stands beside the northern margin of the A1077 Barrow Road approximately mid-way between the market town of Barton upon Humber and the village of Barrow upon Humber. The property was formerly known as Glebe Farm. It has been redeveloped as a purpose-built facility for the care and education of children with special educational needs. The three-storey buildings are constructed of brick with an interlocking concrete pantile roof. The outdoor facilities include a wooded and grassed play area to the west of the main school compound. The site is surrounded with secure fencing and is screened from the main road by a well-managed hawthorn hedge. Trees and dense shrubbery line the eastern and southern margins of the car parking areas and part of the frontage with the road.

2.2 Protected status of the trees

The trees are not protected by a tree preservation order and are located outside the Barton upon Humber and Barrow upon Humber Conservation Areas. This information was confirmed by Colin Horton, Environment Officer (Trees and Landscape) at North Lincolnshire Council in an e-mail dated 14 August 2013.

3.0 DISCUSSION

3.1 Background detail and species selection

The area of copse forming the subject of this report is relatively young. It was originally planted in the 1980s as part of the landscape screening for the large factory which stands to the north of the site. The triangular area of land containing the copse and the existing play equipment was gifted to the school by the factory owners. It is planted with a mixture of native and exotic species (see Appendix A). The bulk of the matrix (approximately 70%) is formed by Common ash and Italian alder in roughly equal quantities. Both are fast-growing species on clay soil over chalk bedrock and the tallest trees have attained heights of 13m. These are also the largest in terms of their volume and can be classed as semi-mature. Another nine tree species make up the remaining 30% of the copse and four species of shrubs are planted along its western margin. There is no significant ground flora beneath the trees since the previous land use was agricultural and the wood has not existed long enough for this aspect to develop. The woodland floor is open and scattered with dead twigs.

3.2 Condition of the trees and their management history

3.2.1 The bulk of the trees within the copse are in good condition in terms of their physiological and structural aspects. Their relative youthfulness has ensured that disease pathogens, death, structural failure and decay are almost absent. There are only two dead or dying trees present. It is clear that the rate of establishment was exceptionally good in the years after planting. The lack of gaps between the trees confirms establishment certainly exceeded a success rate of 95%. It is also apparent that no thinning has been subsequently carried out, demonstrated by most of the trees still standing at their original 1m spacings. The process of natural selection is becoming evident as the smaller, less successful individuals are starting to struggle as they become increasingly suppressed by their more robust competitors.

3.2.2 The linear gap which accommodates the zip-wire apparatus and runway forms the only area where tree removal has occurred. This work has separated the copse into its main northern area and the narrow belt along the roadside boundary. The belt is only two trees in depth but is thickly furnished, forming an effective screen. The hazel, alder and ash trees to either side of the zip-wire have been coppiced to accommodate its construction and use. One of the alders to the north of the runway has now regenerated to a point where it has partially collapsed (see Picture 6). The regenerating coppice growth has assisted in thickening the screening density of the belt. The screening is further enhanced by the well-managed hawthorn hedge running along the frontage boundary. It is tightly clipped at a height of 2.5m and appears to be maintained twice per year.

3.3 Impact of the proposals

The work to form the new MUGA will entail the removal of approximately 62% of the trees (including hazel). None of the trees in the roadside belt will be removed. This will retain around 26 trees in the main copse area. The bulk of these will remain at the northern point of the triangle, with three hazel and a further nine assorted shrubs at its south-western tip. The roadside belt contains approximately 30 standard (un-coppiced) trees plus a similar quantity of coppiced stools. This screen and the adjacent roadside boundary hedge effectively conceal the loss of trees behind them and will continue to screen the MUGA in the future. The access for the construction is via a proposed temporary entrance and route crossing the south-western corner of the main school frontage. One dead rowan is the only vegetation which will need removing to allow this route to be constructed. It may cross the root protection area of the alder at the extreme eastern end of the belt. This tree may need pruning during the tree removal works before the main project starts if the route passes close to it. The work will entail lifting its crown above the height of the construction traffic to prevent unnecessary damage to the branches. There is the potential for root damage to occur to the retained trees at the northern edge of the MUGA from built-up levels for the play surface.

3.4 Mitigating the direct effects of the construction

3.4.1 Temporary access route

The roots of the closest tree at the eastern end of the belt may need to be physically protected where the temporary route passes it. This is likely to take the form of a raised, “no-dig” type of construction for the track, as well as a protective barrier fence for the trunk lining its southern margin. Since the exact location of the route margin is not known at this time, this information will require more detail under reserved matters.

3.4.2 Root protection for retained trees to the north of the MUGA

The stumps of trees being removed closest to the retainable trees in the northernmost triangle of the main copse should not be conventionally dug out. They will require mechanically grinding out to ensure that potential damage to the roots of the retained trees is minimised. The MUGA is to be constructed in a “cut and fill” operation to create the appropriate level as the land has a natural, gentle fall to the north. As yet, the height of the fill above current ground level at the north end closest to the retainable trees is unknown. The degree of batter for the embankment is also undefined. Keeping the area of fill back from the retained trees will be important so as not to bury their roots. Until these details are specified, the precise number of trees being removed at the north end of the project is undecided. Again, this information should be confirmed at the reserved matters stage of the application.

3.5 General constraints and mitigation measures

British Standard 5837:2012 ‘Trees in relation to design, demolition and construction - Recommendations’, lays out specific guidelines for excluding access to the RPAs. It illustrates an acceptable type of protective fencing, the position of which is marked on the tree protection plan. The fencing can be formed from “Heras” type panels but must be fixed into the ground on stakes to prevent it from being casually re-positioned. Signs bearing the words “No Entry – Tree Root Protection Area” must be fixed to the fencing at 10m intervals. The RPAs are necessary to prevent soil compaction by machinery as well as safeguard against the spillage of toxic fuels or chemicals which, if they occurred within the root zone of retained trees, would cause irreparable long-term damage. The RPA fencing must only be removed once the construction phase has been completed.

3.6 General comments regarding the immediate landscape

The site is well-furnished with young and semi-mature trees. Whilst the bulk of them stand within the copse, the grounds are effectively screened from the east and south by trees within the school's ownership. The main frontage of the car park is less densely populated by trees (two Lombardy poplar) but the boundary hedge and dense shrub plantings maintain the visual barrier to the car park. The factory site to the north is very extensively planted with a similar matrix of species to that in the copse, giving a wooded parkland aspect to the locality. The quantity and density of surrounding trees and woodland, in conjunction with the well-clipped hedge, will almost completely negate the visual loss of the trees within the copse.

3.7 Mitigation planting

The loss of trees in the copse will be more apparent when viewed from the south-east, along the line of the proposed temporary access route. Once the construction has been completed and the access track removed, this area at the south-west corner of front car park will lend itself to some additional tree planting. There is a single dead rowan in this location at present. A small group of five or possibly seven carefully selected trees should establish and provide in-fill cover at this point. They will also give an additional benefit in providing summer shade for parked cars nearby. A group of the fastigiate 'Dawyck' beech (*Fagus sylvatica* 'Dawyck') would make an interesting feature here and would be perfected suited to growing in the alkaline soil. There is further space available to the south-west of the existing climbing frame where additional trees can also be planted. Beech (*Fagus sylvatica*) and large-leaved lime (*Tilia platyphyllos*) would be ideal in this location, improving and varying the number and range of species on the site.

4.0 CONCLUSIONS

4.1 Summary of my findings and opinion

The copse is a relatively new feature of the local landscape and has been largely unmanaged to date. Trees have grown on its eastern margin to the point where they will soon need pruning or removing to maintain adequate clearance beside the school building. Approximately 20% of the trees would initially be removed if the copse was to be managed under a thinning regime in order to conserve the better specimens. The area of the proposed development would remove trees which provide limited amenity value from the road outside. This area continues to be thickly screened by the southern belt of trees, its understorey coppice plants and the well-maintained boundary hedge. Further screening can be provided by planting groups of well-chosen trees at the western end of the front car park and the south-western quarter of the outdoor play area.

5.0 RECOMMENDATIONS

5.1 Recommendations for the main contractor

The building contractor should be issued with a copy of the summarised arboricultural method statement (Appendix C) before the contact commences. He should incorporate its recommendations into the Construction Design and Management programme for the project and comply with the timing, allowing unhindered access for the tree contractor. The main contractor must also comply with BS5837:2012 in setting out the protective fencing around the RPA of the retained trees before any other site works begin.

John F Robinson NDArb
Arboricultural Consultant and Managing Director
16 August 2013

APPENDIX A

WOODLAND TREE SURVEY DETAILS

GLOSSARY OF TERMS AND ABBREVIATIONS USED

AGE CLASSIFICATIONS

Y Young	Very vigorous tree aged less than 15% of the projected normal life expectancy for the species/cultivar noted. (Cultivar is the abbreviation for cultivated variety.)
SM Semi-mature	Tree exhibiting good or moderate vigour and aged between 15% - 30% of projected normal life expectancy.

CONDITION

Description	Physiological	Structural
Good	Tree exhibiting robust vitality with vigorous growth and healthy foliage. No discernible pathogenic (especially fungal) activity. Long projected life expectancy exceeding 25 years.	Tree in sound state with no discernible weaknesses or pathogenic activity. No alteration in adjacent ground conditions.
Poor	Tree of declining vitality with abnormally small or discoloured foliage. Fungal pathogens may/may not be present. Projected life expectancy of less than 10 years.	Tree exhibiting significant structural defects, storm damage and/or fungal pathogens. Ground conditions may have been significantly altered so as to impair or weaken root structure.
Dead or Dying	Tree crown has minimal or no foliage present in summer. Bark may be loosened or removed by desiccation or foraging/nesting actions of birds or animals. Fungal pathogens may/may not be present.	Absence of fine twig structures in outer canopy. Dead branchwood throughout crown. Larger limbs may/may not be failing. Ground surface may/may not be cracking as roots degrade or tree becomes progressively less stable. Fallen dead wood littering ground below.

Coppice Regenerative shoots growing from the stump of a tree routinely cut to ground level. Also a verb ie. to coppice.

Crown lifting The removal of lower branches to “lift” the lower crown level so as to remove growth causing an obstruction or allow the improved passage of daylight beneath the tree.

Woodland survey details

Tree species

Sycamore	*Acer pseudoplatanus*
Italian alder	*Alnus cordata*
Grey alder	*Alnus incana*
Silver birch	*Betula pendula*
Downy birch	*Betula pubescens*
Hazel	*Corylus avellana*
Hawthorn	*Crataegus monogyna*
Common ash	*Fraxinus excelsior*
Bird cherry	*Prunus padus*
English oak	*Quercus robur*
Red oak	*Quercus rubra*

Shrub species

Dogrose	*Rosa canina*
Burnet rose	*Rosa pimpinellifolia*
Elder	*Sambucus nigra*
Guelder rose	*Viburnum opulus*

Ground flora Largely absent but occasional bramble (*Rubus fruticosus*) and grasses present at margins.

Tree data

Maximum height	13m (Italian alder)
Average height	10m (estimated)
Maximum stem diameter	253mm (Italian alder)
Average stem diameter	180mm - 200mm (estimated)

APPENDIX B

SURVEY CONDITIONS AND METHODS

1 Dates of inspection

The morning of Tuesday 13 August 2013

2 Persons present

John F Robinson	- Lindsey Tree Services Ltd
Fiona Batty	- Facilities manager, Options Group

3 Weather conditions

Weather conditions at the time of the inspection were bright with a moderate south-westerly breeze.

4 Survey methods

The trees have been visually inspected from ground level. The following apparatus has been used to determine the tree data and other measurements quoted;

Height	- Clinometer
DBH (Diameter at breast height)	- Diameter tape measure

5 General survey information

The DBH measurement is taken at 1.5m above ground level unless otherwise stated. The tree data includes a value for the Root Protection Area (RPA) where applicable (ie for the retainable trees). This figure is taken as the crown spread of a given tree, or is calculated using its DBH value in accordance with BS 5837:2012, whichever is the greater. The Root Protection Radius value equates to the RPA on the ground and is marked on the tree protection plan (site plan).

APPENDIX C

SUMMARISED ARBORICULTURAL METHOD STATEMENT FOR TREE PROTECTION AND MANAGEMENT

Site – Barton School, Barrow Road, Barton upon Humber

Scope of Works

The proposal for the site is to construct a new multi-use games area served by a temporary access from Barrow Road which will be removed on completion of the project. It is recommended that the following method statement is incorporated into the CDM programme for the project.

Method

1 Conduct pre-commencement site meeting to include building contractor, local authority tree officer and/or arboricultural consultant. Identify and confirm location of protective fencing beside access route. Also confirm areas for site accommodation, storage of materials etc. which must avoid conflicting with Root Protection Areas as per BS 5837:2012.

2 Main contractor to remove railings at point of new access and set out secure protective fencing to safeguard RPAs as marked on tree protection plan.

3 Main contractor to construct approved “no-dig” cellular confinement access track into site past retained trees at project entrance if deemed appropriate. Cell depth must be 200mm to allow for weight of construction traffic and backfilled with no-fines washed gravel.

4 Appoint competent, trained arboricultural contractors to carry out tree removal and stump grinding works where necessary, removing all arisings from site. (**Note -** arboricultural contractors must be given unhindered access with no conflicting construction works in progress at same time due to confined nature of site.)

5 Complete remaining construction works.

6 Remove temporary access track.

7 Remove protective fencing around trees.

8 Complete re-seeding of grassed margins where necessary and plant group of replacement trees in agreed locations.

9 Replace site railings across frontage.

APPENDIX D

PHOTOGRAPHS

Picture 1
The position of the proposed access is located through the railings to the left of the picture. The Italian alder on the extreme left-hand side stands in the roadside belt being retained.

Picture 2
A general view of the site from the east. The retained roadside tree screen stands to the left. The trees in the main copse which are to be removed are growing to the right of the gap created to accommodate the zip-wire apparatus.

Picture 3
View from the west showing the main group of trees to be removed. Those to the far left of the group will be retained, as will the group of shrubs in the foreground immediately to the left of the zip-wire frame.

Picture 4
The site viewed from the south showing the proximity of trees to the building. The trees beyond the green fence are those to be removed, whilst the gate indicates the approximate location of the temporary access.

Picture 5
The copse viewed from the south-west. All the trees shown comprise the roadside belt which will remain intact.

Picture 6
The copse margin beside the zip-wire showing the failure of a coppiced alder stem and the open aspect of the woodland floor with its absence of ground flora.

APPENDIX E

John Fraser Robinson

Professional qualifications and experience

Qualifications

National Diploma in Arboriculture (BTEC)
Professional Tree Inspection Award (LANTRA)

Experience

John Robinson has been involved in working with trees on a full time basis since 1976. His career started as a trainee with the forestry department of the Earl of Yarborough's Estate, Brocklesby Park, Lincolnshire from 1976 - 1978.

1978 - 1981 Merrist Wood College, Worplesdon, Guildford
Whilst on industrial placement during the second year of the 3 year course, he gained further experience as an arboricultural trainee with Sheffield City Recreation Department. Individual placements within the department yielded specific experience in tree surgery operations, tree inspections and surveys, plant material handling and nursery practices.

In September 1981, he established Lindsey Tree Services as a partnership with Thomas James Robinson. The firm became incorporated in October 2001 and is based in Grimsby, serving the northern parts of Lincolnshire and surrounding districts as arboricultural contractors and consultants. In addition to both directors, the firm currently employs 5 staff.

The daily organisation of the business yields routine experience in hazard tree evaluation, decay detection assessments and in compiling arboricultural method statements and risk assessments.

He acts as a consultant preparing reports for social housing providers and various departments within several local authorities, as well as a number of utilities, health authorities and conservation organisations. Further wide experience has been gained in reporting for developers, consulting engineers, architects, insurance companies, loss adjusters and solicitors. He has been called as an expert witness on various occasions, giving evidence both in court and to planning appeals and inquiries on matters involving trees.

Professional Association

He has been an Associate member of the Arboricultural Association since 1981 and subscribes to its programme of Continuing Professional Development. He has served on the Association's Northern Branch Committee since March 2001 and attends the AA's annual National Amenity Arboriculture Conference and various technical seminars throughout the year.