

**ARBORICULTURAL
IMPLICATIONS ASSESSMENT**

**ST JOHN'S SCHOOL, WETLEY ROCKS,
STAFFORDSHIRE**

A Report to Mr Worthington

Middlemarch Environmental Ltd.
Triumph House
Birmingham Road
Allesley
Coventry
CV5 9AZ

Tel: 01676 525880

Fax: 01676 521400

E-Mail: admin@middlemarch-environmental.com

Web Site: www.middlemarch-environmental.com

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March 2011

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IMPLICATIONS ASSESSMENT**

**ST JOHN'S SCHOOL, WETLEY ROCKS
STAFFORDSHIRE**

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1 OF 2

01 MR WORTHINGTON.
02 MIDDLEMARCH ENVIRONMENTAL LTD.

This study was conducted and compiled by
Iain Clark HND Arb, M.Arbor.A

*This report is the responsibility of Middlemarch Environmental Ltd,
It should be noted, that whilst every effort is made to meet the client's brief,
no site investigation can ensure complete assessment
or prediction of the natural environment*

Contract Number C109232

March 2011

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1. INTRODUCTION

1.1 PROJECT INTRODUCTION

Middlemarch Environmental Ltd was commissioned to undertake an Arboricultural Survey of trees at St John’s School, Mill Lane in Wetley Rocks, Staffordshire. (Middlemarch Environmental Ltd Report Number RT-MME-109232-01). Middlemarch Environmental Ltd were also requested to compile an Arboricultural Implications Assessment and Arboricultural Method Statement relating to the proposed development at this site. This report covers the Arboricultural Implications Assessment and Middlemarch Environmental Ltd Report Number RT-MME-109232-03 covers the Arboricultural Method Statement.

It is understood that the development works proposed for the site include the redevelopment of the land for affordable housing (6 units) and associated infrastructure.

1.2 SITE DESCRIPTION

The site of St John’s School and associated grounds is located in the village of Wetley Rocks in Staffordshire Moorlands at National Grid Reference SJ 963 493. The site is bordered by St John’s Church to the east. Mill Lane abuts the site to the south. Residential property forms the south western boundary which becomes farmland to the west and the northern boundaries.

The survey area was dominated by buildings and hard standing forming the Old School and associated out buildings. Scattered shrub planting was also present within the site. Located within the church grounds abutting the north eastern boundary of the site was a line of mature lime trees (*Tilia x europaea*) these were included within the survey. The eastern half of the study site was dominated by marshy grassland. A line of over mature alder trees (*Alnus glutinosa*) were located on the northern boundary of the survey area and provided an important landscape feature to the area.

2. ARBORICULTURAL IMPLICATIONS ASSESSMENT

All trees within and closely surrounding the survey area have been surveyed and each has been identified with a unique number. The location of the trees can be found on Middlemarch Environmental Ltd Drawing Number C109232-02-01, Appendix 1. The full details of each of the trees, including the Root Protection Area (RPA) can be found in Middlemarch Environmental Ltd Report Number RT-MME-109232-01.

2.1 PRESENCE OF TREE PRESERVATION ORDERS OR CONSERVATION AREA DESIGNATION

Information provided by Steven Massey (Staffordshire and Moorlands Tree Officer (planning)) shows that no trees on site are subject to a Tree Preservation Order (TPO). It was also confirmed that the site is not situated within a Conservation Area.

2.2 EFFECTS OF THE NEW DEVELOPMENT ON THE AMENITY VALUE OF TREES ON OR NEAR THE SITE

Impacts

The current proposals indicate that the existing trees on site are to be retained. However adjacent to the site are a number of trees highlighted as requiring removal on structural safety grounds. These are discussed below;

A single Category R Holly (T11). This tree is situated within the adjacent churchyard. The tree is a multi-stemmed early mature specimen. The canopy is currently in decline with approximately 50% dieback. As the tree is located on adjacent land, permission will be required by the legal landowner to perform any arboricultural works.

Two Category R Norway maple (T20 and T21). These trees are located to the north of the existing and proposed entrances to the site. Both trees have significant bark delaminating on the basal areas of the trees. As the trees are located on adjacent land, permission will be required by the legal landowner to perform any arboricultural works.

Two dead trees. Located adjacent to the western boundary of the development site in third party ownership are two mature dead trees. It is essential that the legal landowner is contacted to remove the trees. (Illustrated on Middlemarch Environmental Ltd Drawing Number C109232-02-01, Appendix 1).

One dead tree. The tree is located adjacent to T4. It is essential that the legal landowner is contacted to remove the tree. (Illustrated on Middlemarch Environmental Ltd Drawing Number C109232-02-01, Appendix 1).

The loss of these trees will not impact upon the visual amenity of the site.

Mitigation/Avoidance

The draft landscape proposals provided (Sammons Architectural Drawing Number 2010-1714-01 Rev D) indicates the planting of multitude of trees including a mixed native hedgerow to the south of the proposed private road. Quantities of the species to be planted were not available at the time of writing but it is highlighted that native and wildlife attracting species are to be utilised.

2.3 ROOT & CANOPY PROTECTION

Impacts

Several areas of the development encroach into the RPA or canopy of the retained trees. The impacts and proposed mitigation/avoidance for these works are discussed within Sections 2.4 to 2.8.

Mitigation/Avoidance

Construction Exclusion Zones

To ensure no accidental damage to the retained trees it is understood that Construction Exclusion Zones (CEZs) will be implemented. This will protect the Root Protection Area (RPA) and canopy of the trees. The RPA and canopy spread is mapped on Middlemarch Environmental Ltd Drawing Number C109232-02-01, Appendix 1. Details of the RPA figures and crown spread measurements can be found in Tables 3.3 and 3.4, Middlemarch Environmental Ltd Report Number RT-MME-109232-01.

It is understood that the CEZs are to be afforded protection at all times through the use of fencing and/or ground protection (design to following BS5837 (2005)). No works, other than those discussed in Sections 2.4 to 2.8, are proposed within any CEZ that causes compaction to the soil or severance of tree roots.

2.4 CONSTRUCTION PROCESSES OF THE PROPOSED DEVELOPMENT

2.4.1 Site Construction Access

Impacts

The construction access will be from Main Road and will pass outside the RPAs of the retained trees. Vehicles will therefore not impact upon the trees.

Mitigation/Avoidance

All trees surrounding the access routes should be adequately fenced and ground protection installed (where required) to ensure no damage to these specimens during construction.

2.4.2 Contractors Parking

Impacts

Car parking will occur off site, adjacent to Main Road. If any parking on site is subsequently required this will occur on areas of existing hardstanding. Car parking will therefore not impact upon the retained trees

Mitigation/Avoidance

Installation of fencing and ground protection, where required, to ensure no parking occurs within the CEZs.

2.4.3 Site Cabins and Toilets

Impacts

At the time of the report, the site compound location had not been finalised. An assessment of the impacts is therefore not possible.

Mitigation/Avoidance

Installation of fencing and ground protection, where required, to ensure no site cabins etc are sited within the CEZs.

2.4.4 Storage of Materials

Impacts

The storage of materials will be located centrally to the site and therefore is outside the RPAs of the retained trees and as such will not impact upon them.

Mitigation/Avoidance

Ensure no storage occurs within the defined RPAs of the retained trees via the installation of fencing and ground protection, where required.

2.4.5 Construction of Buildings

Impacts

Proposed Buildings

The proposed units 1-6 are to be situated outside the RPAs of the retained trees. Therefore the proposed locations of the buildings will not impact on the retained trees.

Mitigation/Avoidance

None required providing there is installation of fencing and ground protection, where required,

2.4.6 Construction of Roads, Footpaths & Hardstanding Areas

Impacts

There are several areas within the development where construction of hardstanding is proposed within or near RPA of the retained trees. Each area is discussed below:

Proposed Private Drive

The majority of the proposed private drive passes outside the RPAs of the retained trees on or adjacent to the proposed development. Allowances have been made for a 20% offset of the RPAs of Trees T5, T6, T7, T8, T9 and T10 (lime) which are located within St John's Churchyard adjacent to the proposed car park and proposed driveway. This is due to a significant level change from the boundary wall of the churchyard into the proposed development site to the north. Subsequently the rooting structure of the trees will have utilised the area to the south of the trees within the churchyard area. There is a partial infringement within the RPAs T5 and T6, if proposed site levels indicate a reduction in existing levels in this location there may be damage in the form of root severance in this location. At the time of the report proposed site levels were not available for discussion.

Car Parking

The main car parking area is to be located in the south east of the study site and is situated outside the RPAs of the retained trees on or adjacent to the site. Allowances have been made for a 20% offset of the RPAs of Trees 9 and T10 (lime) which are located within St John's Churchyard adjacent to the proposed car park. This is due to a significant level change from the boundary wall of the churchyard into the proposed development site to the north. The open marshy grassland comprising the development area is approximately 1.0-1.5m lower than the adjacent trees located within the churchyard. Subsequently the rooting structure of the trees will have utilised the area to the south of the trees within the churchyard area. RPAs illustrated on Middlemarch Environmental Ltd Drawing Number C109232-03-01 in Appendix 1 demonstrate that the trees will not be affected by these proposals.

Pathways

A proposed path is located at the base of the turning circle to access the churchyard including a gate and step arrangement. This could result in damage in the form of root severance and soil compaction resulting in the loss of gaseous exchange and alteration in ground levels potentially affecting water filtration if standard construction methodology is followed. Steps installation could cause significant root damage in its current location.

New Access

The new entrance is situated outside the RPA of the retained trees.

Mitigation/Avoidance

Proposed Private Drive

Utilise the existing surface levels within the RPAs of Trees T5, T6, and T12. If existing surface removal is required no reduction in levels of the underlying soil should occur. It is recommended that the areas of hardstanding within the RPA of the retained trees on or adjacent to the site should be constructed using a permeable surface treatment This will allow water and oxygen to penetrate the surface and reduce the chance of carbon dioxide build up causing problems with root function.

Car Parking

None required providing adequate tree protection fencing is accurately installed, as per Middlemarch Environmental Ltd Drawing Number C109232-03-01 in Appendix 1

Pathways

The pathway highlighted to the south of the turning circle that is proposed to access the churchyard adjacent to T8 should be relocated to avoid the RPAs of retained trees on or adjacent to the site.

It is recommended that other areas of pathways within the RPA of retained trees should be constructed using a permeable surface treatment and where possible should utilise a 'no dig' construction technique. This will allow water and oxygen to penetrate the surface and reduce the chance of carbon dioxide build up causing problems with root function.

New Access

All trees surrounding the access routes should be adequately fenced and ground protection installed (where required) to ensure no damage to these specimens during construction.

2.4.7 Demolition of Existing Structures & Hard Surfaces

Impacts

The current proposals indicate that temporary classrooms will be removed adjacent to Group 1. If this is not done with care there is a risk that the tree canopies could be damaged.

Mitigation/Avoidance

The following recommendations should be followed to ensure no damage to trees during the removal of the buildings.

1. Protective fencing to be erected immediately before and immediately after necessary demolition works;
2. Any soft ground within the RPA to be covered with wooden boards whilst machinery operating in the vicinity to prevent any compaction of roots.
3. Machinery with large hydraulic arms to be avoided near the crowns if possible. Any superficial wounds to be cleanly cut with secateurs.

2.4.8 Boundary Structures

Impacts

It is understood that several existing boundary structures are to be replaced. The majority of the boundary treatments are outside the RPAs of trees on or adjacent to the site. The chain link fence adjacent to Trees 13, 14 and 15 (alder) is to be replaced with a timber post and rail fence line. There is a risk that root damage could occur to the trees from the excavation for the fence centre posts.

Mitigation/Avoidance

The location of the concrete foundations and centre posts needs to be carefully considered to ensure no damage to the adjacent trees. It is advised that a fencing system be utilised that has the same central post locations/ widths to the current fencing. This will reduce the amount of excavation for post foundations required within the RPA of the retained trees. Additional excavation in these areas will need to occur by hand to ensure no additional root damage.

If this option is not possible then the central fence post locations should not be situated within 1.5 – 2 m of the trunks of the trees along the boundary. Excavation for the fence post foundations should occur by hand and with care not to damage any roots that may be present. Special construction techniques may be required where fence posts are likely to sever significant roots (in order to 'bridge' these areas and avoid severance of any significant roots close to trunks).

If any roots are damaged during the removal of the excavation for the fence posts then they should be cut using proprietary cutting tools such as bypass secateurs or handsaws to leave a clean wound with as small a surface area as possible. No roots over 25 mm in diameter should be cut without advice from an arborist and/or the local council.

2.5 SITE GRADIENTS & CHANGES IN SURFACES AROUND TREES

Impacts

At the time of the report proposed site levels were not available for discussion. An assessment of the impacts is therefore not possible.

Mitigation/Avoidance

If any changes in levels within the defined RPA of the retained trees are required then a suitably experienced arborist should be consulted.

2.6 SERVICE REQUIREMENTS

The location of the new services within the site was unknown at the time of writing. An assessment of the impacts is therefore not possible.

Mitigation/Avoidance

It is advised that the installation of services occur outside the RPAs of the retained trees.

2.7 MITIGATING TREE LOSS/NEW PLANTING

Impacts

The proposed development currently does not result in the loss of trees within the proposed development boundary. However several trees located outside the development have been highlighted for removal on arboricultural grounds. The loss of these trees is not deemed to be a notable consideration as long as they could be replaced by the legal landowners with suitable specimens.

Mitigation/Avoidance

The draft landscape proposals provided (Sammons Architectural Drawing Number 2010-1714-01 Rev D) indicates the planting of multitude of trees including a mixed native hedgerow to the south of the proposed private road. Quantities of the species to be planted were not available at the time of writing but it is highlighted that native and wildlife attracting species are to be utilised.

Any tree planting should utilise specimens that are semi-mature root-balled trees. The trees should be double staked with an adjustable cross bar. The cross bar should be checked regularly and adjusted as required. The stakes should be removed after 3 seasons (approximately 18 months) and the holes filled with soil. The new trees should be surrounded by bark mulch at a depth of 75 mm and a radius of 1 m from the trunk.

The planting season runs from November to March. It is advised that trees are planted within this time frame. If not, a programme of irrigation will be necessary for successful establishment.

2.8 PROXIMITY OF TREES TO STRUCTURES

Impacts

Branch Spread

The ultimate branch spread should not cause a noteworthy issue across the majority of the proposed development. Branch spread may, however, cause a small future issue on the northern elevation of the proposed units (1, 2, 3 and 4 inclusively) this is due to the presence of Trees 13, 14 and 15 (alder). This can be suitably mitigated with pruning which should only be required once the trees reach their full maturity.

Trees 24, 25 and 26 (horse chestnut) are located outside the proposed development adjacent to the proposed unit 6 on the western boundary. As highlighted within the Arboricultural Survey (RT MME 109232-01) these trees are currently young and already displaying signs of decline. Therefore ultimate branch spread may not be realised.

It is not considered that any of the other retained trees will cause issues in relation to branch spread.

Shading

Trees 5, 6 and 7 will ultimately cast a degree of shading on the proposed buildings. As the trees are mature and have all been reduced to approximately 9.0m-10.0m previously, the trees are currently at their approximate ultimate height. Implications for shading of these aforementioned trees have been illustrated on Middlemarch Environmental Ltd Drawing Number C106799B-01 in Appendix 1.

Group 1 trees (Lawson cypress) are located adjacent to the western boundary of the site outside the development boundary; this group of trees may cause significant shade implications if allowed to reach their ultimate height. However it is likely due to the species of the trees, this group may be managed in the future at a reduced height. As the trees are located outside the development boundary, permission will be required from the legal landowner with respect to any form of arboricultural works which would include height restriction.

Fruits, Pollen, Sap etc.

Due to the species of the retained trees they will not cause problems in relation to pollen, sap or fruits.

Mitigation/Avoidance

Branch Spread

Currently none proposed.

Shading

None proposed. However it would be advised to enter discussions with the owner of Group 1 trees in relation to long term management of the group.

Fruits, Pollen, Sap etc.

None proposed.

2.9 MODIFICATIONS PROPOSED TO ACCOMMODATE TREES

The recommendations made within Sections 2.4.1 to 2.4.8 and 2.5 should be followed to ensure that no trees are damaged during the works.

REFERENCES & BIBLIOGRAPHY

Arboricultural Advisory Information Services (AAIS) Practice Note 12 (2007) Through Trees to Development.

BS5837 (2005) Guide for trees in relation to construction

Johnson & More (2004) Tree Guide, Collins, London

Middlemarch Environmental Ltd (2011) Report Number RT-MME-109232-01, Arboricultural Survey: St John's School, Wetley Rocks.

Middlemarch Environmental Ltd (2011) Report Number RT-MME-109232-03, Arboricultural Method Statement: St John's School, Wetley Rocks.

NJUG Volume 4 (2007) Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees.

APPENDICES

APPENDIX 1: Tree Constraints Plan
 Middlemarch Environmental Drawing Number C109232-02-01

APPENDIX 1

Tree Constraints Plan
Middlemarch Environmental Drawing Number C109232-02-01

Legend

- Category A tree
- Category B tree
- Category C tree
- Category R tree
- Category B group
- Category C group
- Estimated current shading
- Estimated future shading
- Current canopy extent, tree to be retained
- Current canopy extent, tree to be removed
- Root protection area (RPA)
- Root protection area before 20% offset
- Proposed works



Client	John Pointon & Sons	Project	St John's School, Wetley Rocks
Drawing	Tree Constraints Plan	Drawing Number	C109232-02-01
Revision	00	Date	March 2011
Scale at A3	1:1,000	Drawn By	SKS
Approved By	IC	Notes	-

MIDDLEMARCH ENVIRONMENTAL

Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ
 T:01676 525880 F:01676 521400
 E:admin@middlemarch-environmental.com

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QUALITY ASSURANCE
ARBORICULTURAL IMPLICATIONS ASSESSMENT

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A Report to Mr Worthington

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Checked by:

Lucy Philpott
Arboricultural Manager

Approved by:

Dr Philip Fermor
Managing Director