

**FITZJOHNS PRIMARY SCHOOL,
HAMPSTEAD, LONDON**

**PRE-DEVELOPMENT
ARBORICULTURAL SURVEY AND
IMPACT ASSESSMENT**

A Report to: Curl la Tourelle Architects

Report No: RT-MME-120553

Date: September 2015



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REPORT VERIFICATION

This study has been undertaken in accordance with British Standard 5837:2012 "Trees in relation to design, demolition and construction - Recommendations".

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DISCLAIMER

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Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are valid for a period of 12 months from the date of survey. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified and experienced arboriculturist to assess any changes to the trees, groups and hedgerows on site and to inform a review of the conclusions and recommendations made.

It should be noted that trees are dynamic living organisms that are subject to natural changes as they age or are influenced by changes in their environment. As such following any significant meteorological event or changes in the growing environment of the trees they should be re-assessed by a suitably qualified and experienced arboriculturist.

NON-TECHNICAL SUMMARY

Middlemarch Environmental Ltd was commissioned to prepare a combined arboricultural survey and impact assessment in respect of the proposed development of land at Fitzjohns Primary School, 86A Fitzjohns Avenue, Hampstead, London, NW3 6NP. It is understood that the site will be the subject of a planning application for construction of a new school office building. To fulfil the project brief a desk study and a field survey of the trees present on site were undertaken in August 2015.

The desk study exercise identified that none of the trees present on site are protected by a Tree Preservation Order. However the site is located within the Fitzjohns and Netherhall Conservation Area and as such the trees surveyed are subject to a degree of statutory legal protection. In particular it should be noted that prior to undertaking any works to trees within a Conservation Area it is necessary to submit a Section 211 notice to the Local Planning Authority giving six weeks' notice of the proposed works. In practice the submission of a planning application containing fully specified details of proposed tree works will usually meet this requirement.

The field survey was undertaken in August 2015 by Edmund Lusk (Principal Arboricultural Consultant). The survey identified that the site contains several young, early-mature and mature ornamental trees which are in a varied condition.

The trees recorded within the survey were typically considered to be of a low to moderate retention value. Whilst some specimens were considered to have a reasonable future potential no trees on site were of such visual significance or arboricultural importance that their retention would be a critical factor in the determination of a planning application. However an off-site Norway Maple (*Acer platanoides*) tree of a high retention value was recorded in the survey and any works in the vicinity of this specimen should be undertaken in such a way that harm to its root system is minimised.

The proposed development of the site will require the removal of three individual trees. All of the trees to be removed were considered to be of a low retention value or considered to be unsuitable for long term retention; as such it is not considered that their loss should be seen as a constraint to development of the site.

To ensure the protection of trees selected for retention during the course of the proposed development it is recommended that the guidance set out in Sections 5 and 6 of this report are considered and that, during development of the site, the retained trees are protected by the erection of tree protection barriers to the specification set out in BS5837:2012.

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1. INTRODUCTION

1.1 PROJECT BRIEF

In August 2015 Curl la Tourelle Architects commissioned Middlemarch Environmental Ltd to prepare a combined Arboricultural Survey and Impact Assessment in respect of the proposed development of land at Fitzjohns Primary School in Hampstead, London.

The proposed development of the site is the construction of a new free standing office building at the entrance to the school. In addition works will include relocating an existing gas meter, the construction of new security fencing and hard and soft landscaping.

The purpose of this report is to:

- Record the current condition of the trees found on the site and categorise them using criteria outlined in BS5837:2012 "Trees in relation to design, demolition and construction - Recommendations".
- Provide a Tree Constraints Plan that identifies any constraints to development presented by the trees to include root protection areas for the retained trees as described in BS5837:2012.
- Provide guidance detailing arboricultural constraints to development and factors to be considered during the detailed design of the proposed development.
- Detail the impact that the proposed development will have upon the site's existing tree stock and set out recommendations for the subsequent mitigation or avoidance of impact.

1.2 SITE DESCRIPTION

The site under consideration, hereinafter referred to as the study area, is an irregular shaped parcel of land located within the grounds of Fitzjohns Primary School which is located off Fitzjohns Road (B511) in Hampstead, London. The study area is approximately 0.1 ha in size and is centred at Ordnance Survey Grid Reference TQ 265 854

The study area is located within a predominately residential area on the southern fringes of Hampstead on the north-western side of London. The surrounding area is dominated by residential development.

The study area is dominated by hardstanding with all notable vegetative features being located adjacent to or beyond its boundaries. The topography of the study area is generally flat with no obvious gradient.

The location of the trees surveyed can be found on Middlemarch Environmental Ltd Drawing Number C120553-01 in Section 8 of this report.

1.3 DEVELOPMENT PROPOSALS

The proposed development of the site is the construction of a new free standing office building at the entrance to the school. In addition works will include relocating an existing gas meter, the construction of new security fencing and hard and soft landscaping.

1.4 DOCUMENTATION PROVIDED

This assessment is based upon the information provided by the client in addition to information collected by Middlemarch Environmental Ltd during a survey of the site undertaken in June 2015. The documents and drawings considered are detailed within Table 1.1.

Author	Document	Drawing Number	Date
Curl la Tourelle Architects	Design and Access Statement / Heritage Statement	705 E	11.07.2015
Curl la Tourelle Architects	New Office – Existing site	705E 2 101	20.05.2015
Curl la Tourelle Architects	New Office – Proposed site	705E 2 102	20.05.2015
Curl la Tourelle Architects	New Office – Ground floor	705E 2 200	20.05.2015
Curl la Tourelle Architects	New Office – First floor	705E 2 201	20.05.2015
Curl la Tourelle Architects	New Office – Elevations	705E 400	March 2015
Curl la Tourelle Architects	New Office – Perspective views	705E 405	March 2015

Table 1.1: Documentation Provided

2. METHODOLOGY

2.1 DESK STUDY

A desk study was undertaken to identify if any of the trees present within or in close proximity to the site are covered by Tree Preservation Orders (TPOs) or if the site is situated within a Conservation Area. This involved consultation with the Local Planning Authority.

2.2 CONDITION STATUS

To determine the status of the trees within the site a full arboricultural survey has been undertaken, assessing the species and status of all trees present. This survey has been carried out in accordance with British Standard 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.

All trees have been assigned a unique reference number. Individual trees above 75 mm in diameter (at 1.5 m above ground level) have had their position plotted to a survey drawing. The trees were visually assessed and a schedule prepared listing: tree number, species, trunk diameter at 1.5 m above ground level (or in accordance with Annex C of BS5837:2012), tree height, crown spread (cardinal points), crown clearance (cardinal points), height of first branch and growth direction, age class and estimated remaining life expectancy in years. Measurements for tree height, first branch height, crown clearance and crown spread were taken to an accuracy of 0.5 m. Stem diameter measurements were recorded to the nearest 10 mm. Any specific observations or recommendations with regard to management were also noted. All these observations and measurements are summarised in Section 4.

Each tree was assessed and assigned to one of the following categories:

- Category A: Those trees of high quality and value with an estimated remaining life expectancy of at least 40 years.
- Category B: Those trees of moderate quality and value with an estimated remaining life expectancy of at least 20 years.
- Category C: Those trees of low quality and value with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150 mm.
- Category U: Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

Categories A, B and C have further sub-categories with regards to the reasons for tree retention:

- 1: Mainly arboricultural qualities
- 2: Mainly landscape qualities
- 3: Mainly cultural values, including conservation.

2.3 ROOT PROTECTION AREA (RPA)

In order to avoid damage to the roots or rooting environment of retained trees, the RPA has been calculated for each of the Category A, B and C trees. This is a minimum area around a tree which is deemed to contain sufficient roots and rooting volume to maintain the tree's viability. Protection of the roots and soil structure in this area should be treated as a priority.

These figures have been calculated utilising the formulas within Section 4.6 and Annex D of British Standard 5837:2012.

3. STATUTORY PROTECTION

3.1 TREE PRESERVATION ORDER AND CONSERVATION AREA DESIGNATIONS

An enquiry has been submitted to Camden Council to establish if any trees on site are protected by a Tree Preservation Order, the results of this enquiry were outstanding at the time of writing. However it has been established that the study area is situated within the Fitzjohns and Netherhall Conservation Area.

The existence of the Conservation Area confers a degree of statutory legal protection upon the trees, with a stem diameter of greater than 75mm (at 1.5m above ground level), growing within it.

In particular it should be noted that prior to undertaking any works to trees within a Conservation Area it is necessary to submit a Section 211 notice to the Local Planning Authority giving six weeks' notice of the proposed works. In practice the submission of a planning application containing fully specified details of proposed tree works will usually meet this requirement.

3.2 PROTECTED SPECIES

Bats

Mature trees often contain cavities, hollows, peeling bark or woodpecker holes which provide potential roosting locations for bats. Bats and the places they use for shelter or protection (i.e. roosts) receive European protection under The Conservation of Habitats and Species Regulations 2010 (Habitats Regulations 2010, as amended). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. Consequently causing damage to a bat roost constitutes an offence.

Generally should the presence of a bat roost be suspected whilst completing works on any trees on site then an appropriately licensed bat worker should be consulted for advice.

Birds

Trees and hedgerows offer potential habitat for nesting birds which are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Some species (listed in Schedule 1 of the WCA) are protected by special penalties. This legislation makes it an offence to intentionally or recklessly damage or destroy an active bird nest or part thereof.

As the trees on, and adjacent, to the site provide potential habitat for nesting birds all tree work should ideally be completed outside the nesting bird season (generally March to September).

If this is not possible then the vegetation should be subject to a nesting bird inspection by a suitably experienced ecologist prior to commencement of works. If any active nests are identified then the vegetation, and a defined buffer zone, will need to remain in place until the young have naturally fledged.

4. SURVEY RESULTS

4.1 WEATHER CONDITIONS AND PERSONNEL

The survey was completed on 18th August 2015 by Edmund Lusk, Principal Arboricultural Consultant. The weather conditions at the time of the survey are shown in Table 4.1.

Conditions	Result
Temperature (°C)	16
Cloud Cover (%)	90
Precipitation	Nil
Wind Speed (Beaufort)	F1-2

Table 4.1: Weather Conditions at Time of Survey

4.2 TREE SPECIES

Tree species recorded during the survey are listed in Table 4.2.

Common Name	Scientific Name
Almond	<i>Prunus dulcis</i>
Copper Beech	<i>Fagus sylvatica</i> 'Purpurea'
Cotoneaster	<i>Cotoneaster frigidus</i>
Norway Maple	<i>Acer platanoides</i>

Table 4.2: Tree Species Recorded During Survey

4.3 TREE QUALITY

Retention Value

The initial stage of a tree survey in accordance to BS5837:2012 looks at the trees on the site in terms of life expectancy and condition. Trees are then categorised according to their retention value.

Category A trees are those that have been assessed as being of a high quality and value; significant amendments to the proposed scheme should be considered in preference to their removal. These trees are shown in **Green** on the Tree Constraints Plan.

Category B trees are those that have been assessed as being of a moderate quality and value; amendments to the proposed scheme should be considered in preference to their removal. These trees are shown in **Blue** on the Tree Constraints Plan.

Category C trees are those that have been assessed as being of a low quality and value; the loss of these specimens should not necessarily be considered as a constraint to development. These trees are shown in **Grey** on the Tree Constraints Plan

Category U trees are those that have been assessed as having no retention value; these trees should not be a material consideration in the planning process. These trees are shown in **Red** on the Tree Constraints Plan.

Category A, B or C trees are those that should be a material consideration in the planning process whilst Category U trees are those which would be lost in the short term for reasons connected to their physiological or structural condition and hence they should not be a consideration in the planning process.

Overall five trees have been inspected in accordance with BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.

A summary of the trees in each of the four categories is given in Table 4.3.

BS5837:2012 Category	Tree Number
A	5.
B	4.
C	1, 3.
U	2.

Table 4.3: Summary of Trees in BS5837:2012 Categories

4.4 TREE SURVEY SCHEDULE

The full results of the Arboricultural Assessment are detailed in Table 4.4.

Tree No.	Species	No. Stems	Diam (mm)	H't (m)	H't 1st Branch (m)	Branch Spread (m)				Crown Clearance (m)				Age	Phys Cond	Struc Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations
						N	E	S	W	N	E	S	W							
1	Cotoneaster	4	150	6.0	1.0 N	2.0	2.0	2.5	3.0	1.0	2.0	2.0	2.0	EM	F	F	10+	C1	<ul style="list-style-type: none"> Multi-stemmed at base. Suppressed form. Previously topped. Epicormic growth at base. Hard surfaces within RPA. 	-
2	Almond	1	170	7.0	4.0 S	3.0	4.5	2.5	2.0	3.0	3.0	3.0	3.0	EM	P	P	<10	U	<ul style="list-style-type: none"> Stem leaning east. In declining condition with deadwood and dieback throughout crown. Decay at stem base. Hard surfaces within RPA. 	Remove tree.
3	Unknown	6	340	8.0	2.5 N	5.0	4.0	2.0	4.0	3.5	2.5	2.5	2.5	M	G	F	10+	C1	<ul style="list-style-type: none"> Asymmetrical crown. Multi-stemmed at base. Minor deadwood in crown. Bark wounds to low branches over site. Hard surfaces within RPA. 	-
4	Copper Beech	1	180	7.0	2.0 N	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0	Y	G	G	20+	B1	<ul style="list-style-type: none"> Located on higher ground in play area. Numerous stem bark wounds. Hard surfaces within RPA. 	-
5	Norway Maple	1	<u>600</u>	16.0	3.0 W	<u>6.0</u>	<u>7.0</u>	<u>5.0</u>	<u>6.0</u>	3.5	3.5	3.5	3.5	M	G	G	40+	A1	<ul style="list-style-type: none"> Off-site tree. No access for detailed inspection. Hard surfaces within RPA. 	-

Key

<p><u>Age Class</u> Y: Young = tree within first third of average life expectancy EM: Early mature = tree within second third of average life expectancy M: Mature = tree within final third of average life expectancy OM: Over mature = tree beyond average life expectancy</p>	<p><u>Physiological Condition</u> G: Good = no health problems F: Fair = symptoms of ill health that may be remedied P: Poor = poor health</p>	<p><u>Structural Condition</u> G: Good = no structural defects F: Fair = remedial structural defects P: Poor = significant structural defects</p>
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000: Estimated dimension due to access restrictions.
RPA: Root Protection Area

Table 4.4: Results of Arboricultural Survey

4.5 ROOT PROTECTION AREA (RPA)

Table 4.5 provides details of the Root Protection Area (RPA) of all trees surveyed which were classified as Category A, B or C specimens. This table also gives an approximate root protection radius for these trees.

Tree No.	Species	Diameter (mm)	Approximate Root Protection Radius (m)	Root Protection Area (m ²)
1	Cotoneaster	150	1.8	10
3	Unknown	340	4.2	55
4	Copper Beech	180	2.4	18
5	Norway Maple	<u>600</u>	7.2	163
<p>Key:</p> <p><u>000</u>: Estimated dimension due to access restrictions.</p>				

Table 4.5: RPA and Approximate Root Protection Radius of Category A, B and C Trees Surveyed

5. ARBORICULTURAL IMPACT ASSESSMENT

5.1 INTRODUCTION

This section of the report details the potential impacts that the proposed development may have upon the sites tree stock. The assessment has been based upon the documents detailed in Table 1.1 with reference to the results of the field survey undertaken in August 2015.

The location of the trees can be found on Drawing Number C120553-01 in Section 8 and a schedule of the trees surveyed can be found within Section 4.

5.2 IMPACTS FROM DEVELOPMENT LAYOUT

5.2.1 Tree Removal

To accommodate the proposed development it will be necessary to remove a small number of trees within the site. The trees to be removed are detailed within Table 5.1 additionally they are identified on the Tree Removal Plan, Drawing Number C120553-02, in Section 8 of this report.

Tree Number	Species	BS5837 Category	Reason for Removal
1	Cotoneaster	C1	To permit construction of proposed new office building.
2	Almond	U	To permit construction of proposed new office building.
3	Unknown	C1	To permit construction of proposed new office building.

Table 5.1: Tree Removal

Overall the proposed development will require the removal of three individual trees. It should be noted that one of the trees, number 2, to be removed was considered to be unsuitable for long term retention due to its poor physiological and structural condition. The removal of this tree would be recommended irrespective of the proposed development and as such its loss should not be seen as a material consideration in the planning process.

The remaining two trees to be removed were assessed as having a low retention value when considered in accordance with BS5837:2012. It is not considered that the removal of these trees should be seen as a constraint to the development of the site as they are not in such a condition that they are likely to make a lasting contribution to the landscape character of the site.

The trees to be removed are not of any particular visual prominence and it is considered that their loss will not impact upon the visual character of the site.

5.2.2 Tree Pruning

In addition to the proposed tree removal it will be necessary to undertake access facilitation pruning works to retained trees present on the site to minimise the potential for branch damage to occur during construction.

In this respect it is recommended that the retained off-site Norway Maple tree overhanging the existing access drive is crown lifted to provide 4.5 m clearance above ground level over the site. This will minimise the potential for branch damage to occur as a result of vehicle movements within the site.

The tree pruning works proposed are of a minor extent and of a routine nature. As such it is not considered that they will have a significant impact upon the long-term health, or visual quality, of the tree.

5.3 IMPACTS FROM DEMOLITION AND RELATED OPERATIONS

5.3.1 Building Demolition

There are no areas on site where the demolition of existing buildings is required. As such no impact from this aspect of the development is considered likely.

5.3.2 Removal of Hard Surfaces

It is understood that the existing tarmac hard surfaces within the site are to be retained and extended where wooden planters are to be removed.

It is not considered that these works are likely to cause harm to the retained trees.

5.3.3 Removal of Services

The existing underground gas service is to be moved as part of the development. This aspect of the development may require works within the RPA of the off-site Norway Maple tree. However the extent of encroachment into the RPA of this tree will be minimal and the affected area is currently hard surfaced with limited opportunity for root growth and development. It is therefore considered that the works are unlikely to impact upon the tree's root system.

5.4 DIRECT IMPACTS FROM CONSTRUCTION

5.4.1 Works within RPAs

The proposed development has been designed so that major works are not required within the RPAs of retained trees. In fact the only aspect of the development that may involve works within the RPA of a retained tree is the relocation of the existing gas meter and the removal of existing timber planters, and reinstatement of a tarmac hard surface. These works will occur within the RPA of tree number 5, an off-site Norway Maple.

As noted in Section 5.3.3 the works to relocate the gas meter will not encroach significantly into the RPA of the tree and thus are unlikely to result in harm to the tree's root system.

With respect to the proposed removal of the existing low level wooden planters and their replacement with a new tarmac surface it is considered that the existing constraints to root development, presented by the boundary wall and existing hard surfaces, will have limited root development in the area affected by the works. As such no significant impact upon the works upon the root system of the tree is anticipated.

5.4.2 Works within Canopy Spreads

Works to remove the existing low level wooden planters will occur within the canopy spread of tree number 5. To minimise the potential for branch damage to occur as a result of the works some access facilitation pruning works, as detailed in Section 5.2.2 are proposed.

5.4.3 Working Space

There are no areas on site where working space for the construction of new buildings will need to be provided within the RPAs of retained trees.

5.5 IMPACTS FROM CONSTRUCTION RELATED OPERATIONS

5.5.1 Site Access

It is understood that construction access to the site will be provided along the existing access track. Retained trees adjacent to the access route are protected from potential impact damage by the existing boundary walls and fences. However as noted in Section 5.2.2 access facilitation pruning works to the overhanging crown of tree number 5 should be undertaken to minimise the potential for branch damage to occur.

5.5.2 Delivery and Storage of Materials

Material deliveries to the site will utilise the existing access road. Retained trees will be protected from harm by the existing boundary walls and fences. Areas for materials storage within the site have not been identified at this stage, however the nature of the site is such that opportunities for the storage of materials in areas away from retained trees exist.

5.5.3 Site Compound

The proposed location for the contractor's compound during development of the site has not been identified at this stage, however the nature of the site is such that opportunities to create a site compound in areas away from retained trees exist.

5.5.4 Contractor's Parking

The locations for contractor's parking have not been identified at this stage. Outside of term time parking could be accommodated within the existing hard surfaced playground area. However during term time there are limited areas within the site where car parking could be provided as such it is recommended that parking is provided in off-site locations.

5.6 POST-DEVELOPMENT IMPACTS

5.6.1 Shading

The nature of the end use of the development is such that no conflict due to shading of the development by retained trees is likely to occur.

5.6.2 Privacy and Screening

The proposed tree removal and access facilitation pruning works will not have a significant impact upon privacy and screening as the school is set back from the main road and is minimally overlooked by adjoining properties.

5.6.3 Direct Damage to Structures

There are no areas on site where retained trees will be in such close proximity to the new development that direct damage, through branch whipping or root growth, are likely to occur.

5.6.4 Future Pressure for Removal

The nature of the proposed development is such that future pressure for tree removal is unlikely to result.

5.6.5 Seasonal Nuisance

It is not considered that a significant degree of seasonal nuisance will occur.

5.7 SUMMARY OF IMPACTS

In summary it is considered that the proposed development of the site will not have a significant impact upon the visual amenity of the local area as a result of the proposed tree removal necessary to implement it.

Additionally the proposed works are unlikely to impact significantly upon the long-term health of retained trees. Whilst some works are to be undertaken within the RPA of one of retained tree the nature of those works are such that they can be completed without impacting significantly upon the health of the tree, subject to the adoption of appropriate working practices.

6. MITIGATION AND PROTECTION

6.1 INTRODUCTION

This section of the report details the initial protection, mitigation and avoidance measures suggested to prevent harm to the retained trees.

6.2 GENERAL TREE PROTECTION

6.2.1 Construction Exclusion Zone

To minimise the potential for harm to occur to the root systems and canopies of retained trees during development it will be necessary to implement construction exclusion zones throughout the site. These are areas surrounding the trees' RPAs and canopies in which no construction works, or related activities, will be undertaken.

It is recommended that the exclusion zones are afforded protection at all times through the use of tree protection barriers and/or ground protection (specified in accordance with BS5837:2012). No works that cause compaction of the soil or severance of tree roots, except where undertaken in accordance with the guidance provided within this document, will be undertaken within any exclusion zone.

Where demolition operations, such as the removal of the existing low level wooden planters, are to be undertaken within the construction exclusion zone the working practices detailed in Section 6.3 should be followed.

6.2.2 Tree Protection Barriers

It is considered that the retained trees will be adequately protected from harm during the construction process by the existing boundary walls and fences which exclude access to vulnerable sections of their RPAs. As such the installation of additional tree protection barriers is not considered to be necessary.

6.2.3 Ground Protection

There are no areas on site where ground protection measures will require installation on this site.

6.3 MITIGATION OR AVOIDANCE OF IMPACTS

6.3.1 Design Amendments

It is not considered that design amendments are required on this site as the trees requiring removal are of a low value and there no areas where significant conflicts between the proposed development and retained trees will occur.

6.3.2 Site Setup and Logistics

Prior to commencement of development a plan should be prepared detailing the locations in which activities related to the establishment of a site compound, contractors car parking areas, material storage areas and associated works are to occur. All such areas should be located outside of the RPAs of retained trees.

7. RECOMMENDATIONS

It is not considered that an Arboricultural Method Statement will be required for the site as the development will not require major works to be undertaken within the RPAs of retained trees. Whilst a small section of the RPA of tree number 5 will be affected by works to relocate the gas meter, and by works involved with the removal of the existing low level planters and their reinstatement with new hard surfacing, it is considered that no significant root activity will be encountered in these locations due to existing constraints to root development. As such no significant impact upon the tree as a result of the works is anticipated.

Nonetheless to ensure that the works in this area do not cause harm to the retained tree, and to ensure other retained trees across the site are protected during development, the following recommendations should be adhered to:

- Prior to commencement of development a plan should be prepared detailing the locations in which activities related to the establishment of a site compound, contractors car parking areas, material storage areas and associated works are to occur. All such areas should be located outside of the RPAs of retained trees.
- Works to remove the existing low level wooden planters shall be completed manually using hand held tools.
- Any excavations of land below the existing wooden planter within the RPA of tree number 5 shall be supervised by an Arboricultural Consultant.
- A pre-commencement site meeting should be arranged between the principal contractor and an Arboricultural Consultant.
- The off-site Norway Maple tree overhanging the existing access (number 5) should be crown lifted to provide 4.5 m clearance above ground level over the site. The works must be completed in accordance with BS3998:2010 "Tree Work – Recommendations".

8. DRAWINGS

Drawing Number C120553-01 – Tree Constraints Plan

Drawing Number C120533-02 – Tree Removal Plan



C120553-01

Legend

- Category A tree
- Category B tree
- Category C tree
- Category U tree
- Current canopy extent
- Root Protection Area

The original of this drawing was produced in colour - a monochrome copy should not be relied upon



Project
Fitzjohns Primary School – New office Building

Drawing
Tree Constraints Plan

Client
Curl La Tourelle Architects

Drawing Number C120553-01	Revision 00
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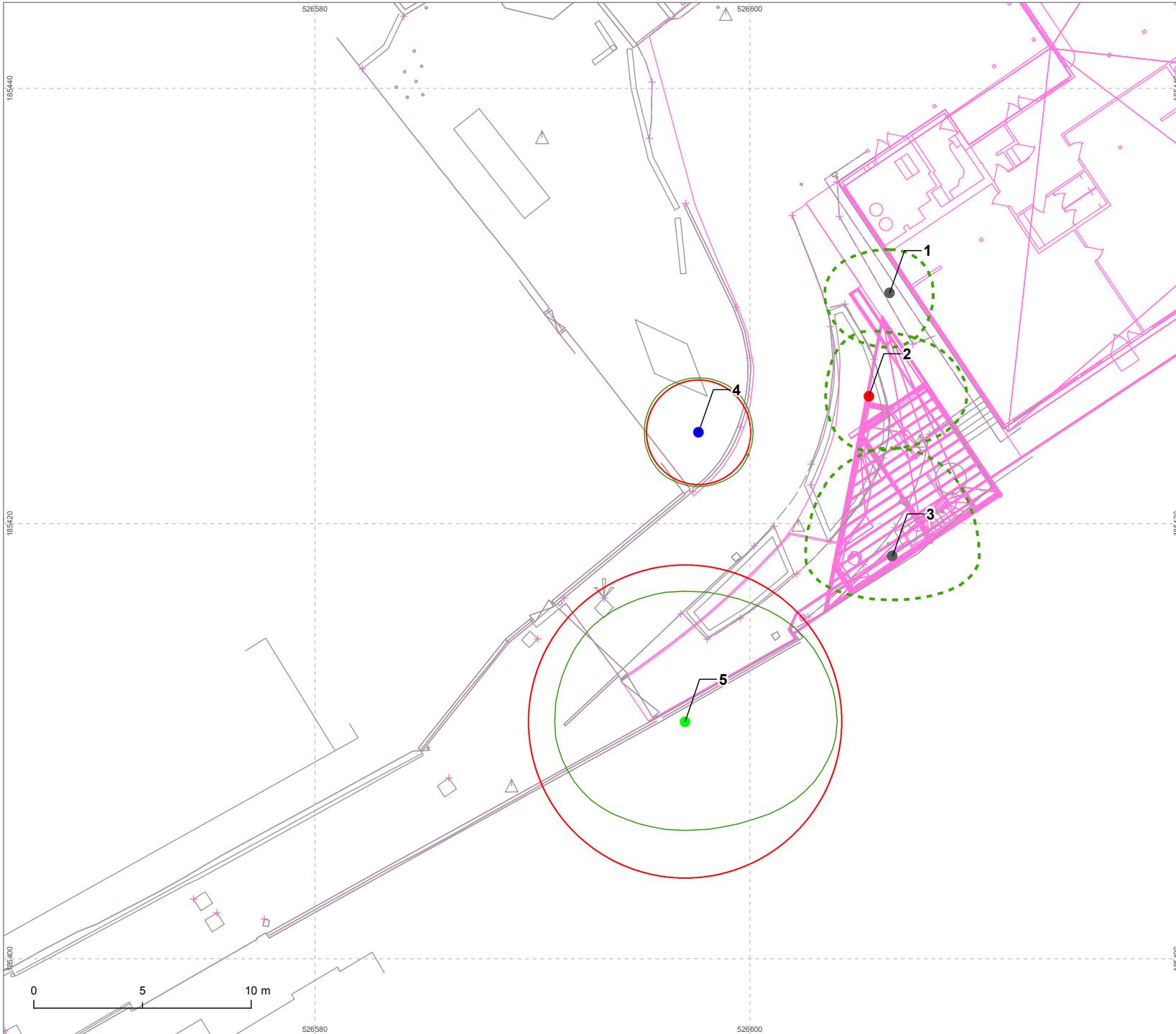
Scale @ A4 1:250	Date August 2015
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Approved By LP	Drawn By RP
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C120553-02

Legend

- Category A tree
- Category B tree
- Category C tree
- Category U tree
- Current canopy - tree to be retained
- - - Current canopy - tree to be removed
- Root Protection Area
- Proposed development

The original of this drawing was produced in colour - a monochrome copy should not be relied upon



Project
Fitzjohns Primary School – New office Building

Drawing
Tree Removal Plan

Client
Curl La Tourelle Architects

Drawing Number	Revision
C120553-02	00

Scale @ A4	Date
1:250	September 2015

Approved By	Drawn By
EL	RP

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Drawing based on proposed plan "705E proposed site.dwg" supplied by the client

REFERENCES AND BIBLIOGRAPHY

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

British Standards Institution. (2012). *British Standard 5837:2012, Trees in relation to design, demolition and construction – recommendations*. British Standards Institution, London.

British Standards Institution. (2010). *British Standard 3998:2010, Trees work– recommendations*. British Standards Institution, London.

Johnson, O. and More, D. (2004). *Tree Guide*. Collins, London.

Lonsdale, D. (1999). *Principles of Tree Hazard Assessment and Management*. DETR, London.

Mendip District Council. (2015). *Mendip Online Maps*. [ONLINE] Available at:
<https://maps.mendip.gov.uk/mymendip.aspx>. [Accessed 15 June 15].

National House Building Council. (2014). *NHBC Standards 2014: Chapter 4.2 - Building Near Trees*. NHBC, Milton Keynes.

National Joint Utilities Group. (2007). *Volume 4: NJUG Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees*. NJUG, London.