LB Camden Ref:
2011/4390/P
Registered 2nd November 2011

Landscape Planning Ltd Ref:
55928

Planning Application Location:
The Water House, Millfield Lane, London, N6 6HQ

Date of Report:
01 July 2014

Client:
Mr & Mrs A Beare
Dormers, 49 Fitzroy Park
London N6 6HT
and
Mr & Mrs D Dale
The Wallace House, Fitzroy Park
London N6 6HT

Site visit to Dormers, 49 Fitzroy Park, London, N6 6HT;
9 April 2014.

Arboricultural Report:
Prepared on the instructions of Mr & Mrs A Beare and Mr & Mrs D Dale concerning redevelopment of land neighbouring their two properties.

Planning Proposal;

Erection of a new 2 storey plus basement dwelling house (Class C3) with garage, including associated green roofs and landscaping works, following the demolition of an existing dwelling house. (Revised plans and reports submitted including BIA and CMP)

CONTENTS

1.0 Introduction....2
2.0 BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations....4
3.0 Successful tree retention by adequate tree protection measures....6
4.0 Arboricultural Impact Assessment June 2011 Rev C....9
5.0 Arboricultural Method Statement June 2013....10
6.0 Basement Impact Assessment: 26128 – 01(00) – January 2013....11
7.0 Construction Management Plan Revision H – March 2013....13
8.0 LB Camden Conservation and Urban Design:Trees comments October 2013....16
9.0 Conclusions and Executive Summary....17

APPENDICES

APPENDIX 1 – Professional Profile of Margaret MacQueen
APPENDIX 2 – Site survey
APPENDIX 3 – CIEEM Ecology Survey Guidelines
APPENDIX 4 – Site photographs

1.0 Introduction

1.1 Landscape Planning Group Ltd have been appointed by Mr & Mrs A Beare, Dormers, 49 Fitzroy Park, London, N6 6HT and Mrs & Mrs D Dale, The Wallace House, Fitzroy Park, London, N6 6HT to report on arboricultural issues arising as a result of the Planning proposals submitted by SHH Architects being considered by the London Borough of Camden for the:

- Erection of a new 2 storey plus basement dwelling house (Class C3) with garage, including associated green roofs and landscaping works, following the demolition of an existing dwelling house. (revised plans and reports submitted including BIA and CMP)

At the site of the Water House, Millfield Lane, London, N6 6HQ

1.2 My professional profile can be found at **Appendix 1.**

1.3 I am asked in the first instance to consider the effects of the redevelopment proposals on the successful retention of T1, a Beech (Category B) within the rear garden curtilage of Dormers and in addition whether an objective approach has been taken in evaluating the significance of T2, a Mulberry (Category A) located within the curtilage of The Wallace House immediately west of the rear garden boundary of Dormers.

1.4 I have been asked to consider the perceived pressures on successful tree retention caused by the redevelopment proposals. So by deduction I must assess whether the redevelopment proposals apply the guidance found in British Standard 5837:2012 Trees in relation to design, demolition, and construction - Recommendations.

1.5 I have reviewed the various reports and plans in support of the planning proposal via London Borough of Camden's website. I note that the earlier submission made in 2008 is withdrawn.

1.6 I visited Dormers on 9th April 2014 and was provided access to the garden curtilage of the Wallace House during my visit. See my comments in separate document. See **Appendix 2** for the site survey.

1.7 I note the Local Authority pre application advice on trees issues states in the summary:

"All mature and significant amenity value trees either on site or overhanging from neighbouring gardens should be retained; it appears from the plans that this is the case and that the Root Protection Areas of these trees are not encroached upon. A full arboricultural report with an accurate survey will be expected with any submission, showing what trees are retained or felled, what replacement planting is proposed and how trees will be protected during the construction process."

1.8 Because site access has not yet been extended it has not been possible to verify the above claim from within the development site that *"it appears from the plans that this is the case"*.

1.9 However it was very clear from the measurements that it was possible to take within the garden of Dormers of T1 and similar observations of T2 from within the garden of The Wallace House that the redevelopment proposal will significantly impact on Beech T1 and Mulberry T2 and this raises significant concerns regarding the reliability of the claim in 1.8 above.

2.0 BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations

2.1 There have only been four editions of this particular Standard with the first edition published in January 1980, the second edition in December 1991, the third addition in September 2005, and the present edition issued in April 2012 which came into effect on 30 April 2012.

2.2 Arboricultural Impact Assessment Report SHH/WHS/AIA/01RevC is dated 30th June 2011 so appears to have been prepared with reference to BS 5837: 2005 "Trees in Relation to Construction".

2.3 The 2005 version of BS 5837 had been superseded at the time of the submission to the London Borough of Camden in June 2013 of the Arboricultural Method Statement. In our opinion the AIA Report should have been updated in the light of the 2012 version of BS 5837 to reflect reference to the correct source document. Rather than to a version which has been withdrawn.

2.4 The AIA Report should have been updated in 2013 not least because trees off site were not properly dimensioned in conjunction with their Root Protection Areas or RPA's.

2.5 Paragraph 4.2.4 c) of BS 5837: 2012 states the survey should record:

"the positions of trees with an estimated stem diameter of 75mm or more that overhang the site or are located beyond the site boundaries within a distance of up to 12 times their estimated stem diameter".

2.6 Paragraph 4.4.1 of BS 5837: 2012 states that:

2.7 *"The results of the tree survey ,including material constraints arising from existing trees that merit retention should be used to inform feasibility studies and design options. For this reason the tree survey should be completed and made available to designers prior to and/or independently of any specific proposals for development*".

2.8 We note and acknowledge the transparency in the terms of reference at 2.1.2 of AIA Rev C June 2011 which confirms that the development proposals were known at the time of the tree survey.

2.9 In our view this should have only reinforced that the Arboricultural Survey should have both been revised to include all trees as per para. 4.2.4c) of BS 5837: 2012 and subsequently been used as the baseline survey by the Architects; and for the Basement Impact assessment and Construction Management Plan.

2.10 But that has not been the case with not only omissions in trees off site not being included so their appropriate RPA's omitted but presumptions made over taking heavy mechanised plant close to and breaching RPA's within the development site.

2.11 The assumptions that the proposals will not cause significant harm to adjacent trees off site are exemplified by adding the missing RPA's for Beech T1 and Mulberry T2 both of which will be breached by:

a) all site traffic passing within the RPA of Mulberry T2 and,
b) harmful excavations site side of Beech T1

2.12 The excavations will remove an unacceptable area of ground in which the Beech roots are ranging for water and nutrients. As well as severing Beech roots growing in tension on the windward side of the Beech which are contributing to the stability of the Beech.

3.0 Successful tree retention by adequate tree protection measures

3.1 The BS 5837: 2012 *Trees in relation to demolition, design and construction – Recommendations* provides Best Practice in relation to minimising impacts caused by construction techniques on the retention of trees.

3.2 Section 3 on Terms and Conditions defines the Root Protection Area (RPA) as a *"layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability and where the protection of the roots and soil structure is treated as a priority"*.

3.3 Section 5 on Proposals: conception and design reminds the Practitioner that: *"RPAs represent below ground constraints. Above ground constraints might arise from the following attributes: "*

- *"… the current and ultimate height and spread of the tree"*.

3.4 Section 4 on Feasibility: surveys and preliminary constraints addresses how to calculate the RPA at 4.6:

- For single stem trees the RPA should be calculated as an area equivalent to a circle with a radius 12 times the stem diameter (Beech T1 has a diameter of 490mm and Mulberry T2 has a diameter of 800mm).

3.5 Section 4.6.1 goes on to say that *"in all cases the stem diameters(s) should be measured in accordance with Annex C and the RPA should be determined from Annex D".*

3.6 Annex D of BS 5837: 2012 states *"the RPAs given in Table D1 should be used for single stem trees and the equivalent resultant combined stem diameter for multi stemmed trees"*.

3.7 On this basis Beech T1 with a stem diameter of 490mm has an RPA of 113 square metres and a radius of a nominal circle of 6m.

3.8 Mulberry T2 with a stem diameter of 800mm has an RPA of 290 square metres and a radius of a nominal circle of 9.6m.

3.9 Turning to the branch spread of the Beech and Mulberry 4.4.2.5 e of BS 5837: 2012 advises that measurements are taken as a minimum at the four cardinal points to derive an accurate representation of the crown.

3.10 The measurements of the Beech were:

- 5m north; 7m east; 5m south; and 7m west.

3.11 The measurements of the Mulberry were:

- 4m north; 5m east; 5m south; and 7m west.

3.12 The June 2011 Arboricultural Impact Assessment tree survey includes estimated stem diameters including Beech T1 because the tree dimensions were not verified by requesting access to the adjacent garden. Furthermore Mulberry T2 has neither a measured stem diameter or as a result no designated RPA.

3.13 This has been further compounded by BS 5837: 2005 Trees in relation to Construction – Recommendations being withdrawn during the London Borough of Camden considering the November 2011 Planning submission.

3.14 The impact of the proposals on Beech T1 and Mulberry T2 is much greater than as shown by the Developer's tree report because of the underestimated RPA in relation to Beech T1 and no RPA constraint applied to Mulberry T2. The June 2011 AMS contains no comment on Mulberry T2 and in relation to Beech T1 "low invasive foundation design if possible". This comment does not reflect the full impact of the basement excavation proposed adjacent the boundary at this point. (what do they actually say about these two trees?)

3.15 The proposals will, contrary to the various submissions before the Planning Authority made on behalf of the Developers, result in significant damage to the rooting areas of both Beech T1 and Mulberry T2. So not only run contrary to both the guidance on Best Practice in the current British Standard but also contrary to the Camden LDF Development Policies which were adopted in 2010.

3.16 It is very clear that the development proposals will have a harmful impact on the current relationships between Dormers or The Wallace house, the curtilage boundaries, and Beech T1/Mulberry T2.

3.17 The development proposals do not discharge the Council's duty to protect the visual amenities afforded by the Beech or Mulberry not only to the owners of Dormers and the Wallace House but all local residents.

4.0 Arboricultural Impact Assessment June 2011 Rev C

4.1 The first point of interest is that the AIA identifies under “Caveats” on page 3 the need for an ecological assessment which has not been carried out to date and this application should not be determined until such a survey has been completed.

4.2 The absence of Council pre app advice on seeking to see that the Developer has carried out a range of habitat audits is, I believe, an omission.

4.3 We need to see a properly structured ecological approach both to the site itself and to Millfield Lane (including the trees which fringe the substantial land boundaries) including echo location for bats and an objective assessment of plant communities. **See Appendix 3** for Ecology Survey Guidelines

4.4 I am also concerned that the pond located on The Water House site as a source of water, whether deemed artificial or not, is simply to be drained and apparently in part replaced by land drains to be dug below the canopy of the veteran Oak within its root zone.

4.5 The June 2011 AIA needs proofing as at 2.1.1 as we can see a reference to an entirely different site (25 Grange Avenue, London, N20 8AA)

4.6 At 2.1.2 we also note the candid admission that “the proposals were known at the time of the survey” so there has to considerable strength of purpose to ensure the site surveys – ecological and arboricultural - are rigorous in assessing the site for its capacity for sustainable development and not just seeking to see how the site can stretch to fit the development proposals.

5.0 Arboricultural Method Statement June 2013

5.1 We note in the Introduction at 1.1.2 “this document lays down methodology for any proposed works that may have an effect upon the trees on and adjacent to the site”

5.2 However not all trees at 75mm diameter x 12 distance from the proposed works are detailed. (as per para 4.2.4c) of BS 5837: 2012)

5.3 Development pressures on this site continue to be exemplified by paragraphs:

- 3.2.1 “However this degree of protection is not entirely possible on site”
- 3.2.2 “All involved parties will need to be made aware of the deficiencies”
- 3.2.3 “Existing tarmac will not be adequate ground protection for heavy plant use”

This is a site gearing up for a great deal of intensive re development pressure:

- At 3.3.3 a significant assumption is made that Millfield Lane has load bearing capabilities so does not need protection but will be repaired after it has been damaged. The two points seem more than a little contradictory.

- At 3.3.4 the opening and concluding sentences make little sense because the Tree Protection plan shows that vehicles will not “be excluded from RPA’s”

- At 3.3.5 the distance between the east end gable and the site boundary with No. 55 Fitzroy Park is approximately 3.5 metres

- At 3.4.2 we note that all the AMS can say about the routing of services is “so we have no measure of the impact to be caused”

6.0 Basement Impact Assessment: 26128 – 01(00) – January 2013

6.1 We note at paragraph 1.2 under Regulatory Context that:

- "LB Camden will only permit basement and other underground development where it can be demonstrated that it will not cause harm to the built and natural environment including the local water environment and ground stability"

6.2 In our opinion it has not been demonstrated that the impact of the north west basement will not harm the Beech tree T1 by virtue of the depth and extent of the excavation proposed. This opinion arises from the fact that we note at paragraph 2.3 under Details of Proposed Development that in relation to the second proposed basement structure:

- "Existing ground elevation at the north eastern end of this proposed basement structure is 82.2m AOD indicating that a maximum of 3.5m of excavation (allowing for construction thickness of the basement floor slab) will be required decreasing to approximately 2.0m of excavation at the southwest of the basement to achieve a finished floor level of 79.1m AOD"

6.3 At paragraph 3.3.2 under Shrinkable Soils and Trees:

- "The shallow soils at the site may, therefore potentially be prone to seasonal shrink – swell (subsidence and heave). It is not known whether such effects have had an impact on any properties in the general area underlain by these soils but there is no evidence to suggest that the current building at the Waterhouse site has been affected"

- It is unfortunate that the BIA at this stage seems vague about concrete research on cases of subsidence damage in the immediate area. Not least because BS 5837: 2012 makes specific reference to carrying out a soil assessment at paragraph 4.3 and makes reference to Annex A .

6.4 The need for a soil assessment arises from the need to "inform any decision relating to"

- The root protection area
- Tree protection
- New planting design

- Foundation design to take account of retained; removed and new trees

6.5 A brief review of the database of 30,000 property damage cases due to indirect damage caused by tree roots over the last ten years indicates that we have dealt with 12 other cases in N6 6. In our view we need to see that a soil assessment has been carried as per para. 4.3 of BS 5837: 2012.

6.6 We note at 3.3.5 the discussion on the "structural stability of adjacent properties"**:** when our immediate concern in respect of the Beech T1 are the ground movements resulting in 50% of the rooting area being severed on the windward face of the tree's root plate leading to the instability and inevitable loss of this mature tree. Dormers has already experienced the adverse impact of deep excavation adjacent its southeast boundary leading directly to loss of trees made unstable by the consequences of deep excavation.

7.0 Construction Management Plan Revision H – March 2013

7.1 My first observation is to draw attention to the lack of cohesion between the various versions of what should be the fundamental base line tree survey plan as at Arboricultural Impact Assessment SHH/WHS/AIA/01 Rev C dated 30 June 2011.

7.2 It is simply not acceptable considering the guidance on the requirement to survey off site trees in BS 5837: 2012 that we do not see a common scaled tree survey base plan in use in conjunction with the BIA or CMP. This is an omission that needs to be addressed before determination.

7.3 Some off site trees were added by Landmark in June 2011 but for example not all trees to be affected by the anticipated pressures caused by using Millfield Lane to gain access to the site have been noted and on those few that have been included their RPA's have been omitted. In our opinion the absence of a revision to the AIA being commissioned in 2012 is probably why there is no comprehensive base line tree survey and this needs to be addressed before determination

7.4 Base plans used by RSK for their BIA in January 2013 neither show all the trees or any RPA's (Beech T1 and the bulk of Millfield Lane are omitted from Fig. 3 but more trees on Millfield Lane do appear on Fig. 6).

7.5 By the time Rev H of the CMP is produced in March 2013 we have a base plan showing less trees than the RSK BIA even though no trees have been felled in the interim the Beech T1 canopy overhang removed and no RPA shown protecting T2 Mulberry.

7.6 The indicative site layout and phasing plans warrant substantial scrutiny:

- Phase 1 shows the access route to the rear elevation of the Waterhouse sweeping via the RPA of the veteran Oak and through the presumably already demolished footprint of the current built projection within the footprint of the phase 2 building. A significant pinch point occurs where access is routed to the side of the existing footprint directly adjacent another landowner's garden and pond.

- This presupposes the onsite crushing location has already been established though we are not advised exactly where this will take place or where the crushed materials are to be stored.

- Our concern is that the plan shows vehicular movements within the RPA of an Oak described as having veteran status which have to be entirely predicated on substantial protective measures having been installed which have to withstand the loaded weight of an HGV. It is not enough to seek clarity on the numbers of HGV movements we have seen no details of the overall weight of an HGV leaving site.

- We are supposed to presume the yellow areas are the working area however it is particularly noticeable to the rear of the site that the working area relies heavily on breaching the RPA's in particular of the Hornbeam.

- These are very contrived working areas given the British Standard refers to a RPA being breached up to 20% providing the breached area can be shown on another side of the tree. It has not been shown how the compensation for adverse impact on the RPA calculations has been included

- It has not been shown that the proposed major infringements as highlighted by the CMP plans do constitute safe impacts. It is therefore not clear whether the CMP has simply been researched believing that there are no adverse impacts. Or whether the CMP cannot demonstrate how impacts can be mitigated because there is insufficient space on site to do so.

- The presumption in relation to accessing the site is that Millfield Lane can be essentially urbanised by pruning the trees and obliterating the rural surface of the lane.

- Section 6 of the CMP is a series of contradictions

    - In para. 2 and 3 "tree root protection works would also be carried out as appropriate" (described as a reactive maintenance regime)
    - in para. 4 much hinges on discovering the Lane (not road) structure has a CBR of 30%.
    - So can Motion come clean on the impact of weighted HGV lorries on a surface not designed to cope with offering a load bearing capacity to HGV's.

- In my opinion it is also a mistake to be drawn into being told that the Swept Path analysis has been carried out using an HGV when we should at least know the impact of the exiting journey which will be a fully loaded HGV.

- Quite apart from the range of other vehicular weights; lengths; widths not assessed either using the Millfield Lane access or the impact of multiple sub soil impacts on the development site itself.

8.0 LB Camden Conservation and Urban Design: Trees comments October 2013

8.1 With reference to these observations dated 14th October 2013 I note these comments had to be pursued through a Freedom of Information Act request

8.2 The Council's senior Planning Tree Officer acknowledges in his internal comments that *"the annex described as a guest room and connecting walkway do encroach to a significant degree upon the root protection area of the Hornbeam numbered 17 in the arboricultural report"*

8.3 It *would* be untenable to acknowledge the impacts in relation to Hornbeam T17 and not recognise that unacceptable impacts will be caused in relation to Beech T1

8.4 The sentence "*details of foundations are covered in the arboricultural method statement are no dig and should not be detrimental to affected trees*" makes no sense at this point in the Tree Officers comments.

8.5 The second paragraph on the second page of the Tree Officer's internal comments should be read in *conjunction* with the concerns expressed with respect to "changes in grade" at 3.5 of the June 2013 AMS. To be clear no details have been supplied with respect to the:

i) storage
ii) handling and
iii) regarding of the spoil.

8.6 It is completely unacceptable to note the Tree Officer's concerns as recently as October 2013 which acknowledges the damage caused by the intention to redistribute spoil on site and have no methodology in the AMS.

8.7 It is simply not possible for the Council's Planning Department to rely and apply the Tree Officer's October 2013 comments on the Tree Protection Plan measures when there is no complete tree survey as per applying the need to measure all trees on and off site at 12 times the diameter as per BS 5837: 2012.

9.0 Conclusions and Executive Summary

9.1 The impact of the proposal and consequent associated impact of construction traffic will be harmful not only to immediate neighbours of the site but to the area in general. This is demonstrated in a number of ways.

9.2 6.17 of the Planning Statement August 2011 draws on the location being screened by trees on the boundary of the site many of which are owned by other neighbouring parties. These same trees are required to absorb the impact of the site being re-developed. The capacity for these trees to continue to screen the development site will be irreparably compromised.

9.3 The current acknowledged rural form and character of the approach lane (not as referred to "road") area will be urbanised by the scale of the proposals.

9.4 We regard the proposals as presented will cause unacceptable levels of impact on the Beech T1 (and Mulberry T2) such that the safe retention of Beech T1 (and Mulberry T2) will be compromised by soil disturbance, root severance, and root loss.

9.5 6.43 of the same Planning Statement states that the basements "have a negligible impact on trees". This has not been shown to be the case with the anticipated impact of deep excavations destabilising Beech T1 and the main location of all vehicular movements on/off site having to be routed within the RPA of Mulberry T2 which will cause harm as a result of compaction.

9.6 Natural England provides useful commentary on Protected Species and the Planning System and provides useful summaries for Local Authorities and Developers. The National Planning Policy Framework places clear responsibilities on Local Planning Authorities to aim to conserve and enhance biodiversity and to encourage biodiversity in and around developments.

9.7 The proposal in its current form cannot demonstrate how biodiversity is to be conserved and enhanced because the Local Planning Authority has placed no onus on the Developer to carry out any ecological site surveys.

9.8 The proposal in its current form has been demonstrated to cause unacceptable adverse impacts on the safe tree retention on and off site, but the Council continues to not listen to the weight of public comment which is opposed to the development in its current form

9.9 We therefore believe that Members should vote to reject the proposal.

Margaret MacQueen BSc CBiol MSB MICFor CEnv MAE
Consultant Arboriculturist
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APPENDIX 1

Professional Profile

NAME: Margaret MacQueen

POSITION: Consultant Arboriculturist

SPECIALIST FIELD: Tree Preservation Orders; Conservation Area Regulations; Appeals Procedure; tree related Planning and Subsidence cases; tree related Personal Injury cases; CPR & Section 203 cases.

LENGTH OF SERVICE: From February 2004

QUALIFICATIONS:
- BSc (Open.)
- HND Horticulture and Landscape Technology
- Royal Forestry Society Certificate in Arboriculture
- Arboricultural Association Technician's Certificate
- Chartered Biologist
- Chartered Forester
- Chartered Environmentalist

MEMBERSHIPS:
- Member of the Society of Biology
- Member of the Institute of Foresters
- Member of the Society for the Environment
- Member of the Academy of Experts

EXPERIENCE:

Margaret first qualified in 1977 and worked within the private sector, managing both forestry and amenity trees for 12 years. Following this Margaret worked in Local Government, firstly as an Assistant Conservation Officer and then as a Conservation Officer for 14 years. During this time Margaret dealt with all statutory tree applications and notifications, landscape planning issues, and the formulating of policies for tree retention and management. Margaret managed all the Council owned amenity trees and areas of woodland, attended regular Highway Authority Utility Committee meetings and organised training for voluntary groups such as the Parish Tree Wardens.

Since joining OCA UK Limited Margaret has been instrumental in the development of all services relating to protected trees and planning matters associated with tree related subsidence.

Margaret is currently employed as lead Consultant within the OCA UK Limited Expert, Legal and Consultancy Team, dealing with complex & high net worth claims, TPO Appeals, TPO Objections, s.203 claims, method statements relating to repair/construction adjacent protected trees, and Expert Witness statements. In addition, Margaret has overall responsibility for audit and training for all matters relating to statutory procedures and subsidence.

Margaret is also a member of the Landscape Planning Limited review group who are responsible for consultation and comment on changes to legislation and developments affecting trees and landscape.

APPENDIX 2

ARBORICULTURAL IMPLICATIONS ASSESSMENT
TREE SURVEY TABLES
Surveyor: Margaret MacQueen
Date Surveyed: 09 April 2014

55928 - Tree Survey Tables
The Water House

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Tree No.	Species (English) Latin if any doubt	Age Range	Condition	Height (m)	Crown Spread (m)				Stem Diam @ 1.5m (mm)	Comments (incl. Structural condition)
					N	S	E	W		
T1	Beech	EM	B	14	5	5	7	7	1x 490	Stem diameter produces an RPA of a nominal radius of 6m.
T2	Black Mulberry	EM	A	13.8	4	5	5	7	1x 800	Stem diameter produces an RPA of a nominal radius of 9.6m.

Location:	The Water House, Millfield Lane, London, N6 6HQ
Drawing No:	55928-001
Survey Date:	09/04/2014
Scale:	1:500 @ A4

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APPENDIX 3

Technical Guidance Series

CIEEM

Chartered Institute of Ecology and Environmental Management

Guidelines for Preliminary Ecological Appraisal

www.cieem.net

GUIDELINES FOR PRELIMINARY ECOLOGICAL APPRAISAL

Section 1 – Introduction

Background

Preliminary ecological surveys[1] have a range of purposes; one key use is in the site development process to gather data on existing conditions, often with the intention of conducting a preliminary assessment of likely impacts of development schemes or establishing the baseline for future monitoring. As a precursor to a proposed project, some evaluation is usually made within these appraisals of the ecological features present, as well as scoping for notable species or habitats, identification of potential constraints to proposed development schemes and recommendations for mitigation. Developers should be advised and encouraged to enter into discussions with planning authorities as early in the development process as possible.

A Preliminary Ecological Appraisal indicating, for example, the likely significance of ecological impacts on a proposed development site will be an important contribution to these early stages. It will help the developer and the planning authority to agree the appropriate scope of any subsequent impact assessments, or that ecological impacts will not be a significant issue in the determination of the application when it is submitted. Preliminary Ecological Appraisals would also be an important preliminary step, whether taken by the developer or the planning authority, to inform decisions as to whether a particular site should be included as an allocation in a development plan. The information obtained from such an appraisal is appropriate for use in the process of selecting preferred options and in the strategic environmental assessment of the plan.

A Preliminary Ecological Appraisal, together with any ecological evaluation undertaken, does not replace the more formal Ecological Impact Assessment (EcIA) (IEEM 2006 and IEEM 2010). A Preliminary Ecological Appraisal may be prepared before undertaking a full EcIA or may be stand alone documents where no EcIA is required. No comprehensive up-to-date guidance exists for undertaking this type of baseline ecological assessment.

Brief guidance is set out in Chapter 2 (*Extended Phase 1 Habitat Map with Target Notes*) of *Guidelines for Baseline Ecological Assessment* (Institute of Environmental Assessment 1995). This is the key reference, and appears to be widely cited by consultant ecologists as the basis for such studies. *Guidelines for Baseline Ecological Assessment* was published in 1995 and relevant information within it is concise and limited. Furthermore, since its publication, many changes have taken place with regard to planning and legislation requirements and standard ecological survey methodologies.

As a result of the lack of up-to-date guidance, there is a variety of ecological assessment reports produced by ecological consultants as part of the initial phase of the development process that use differing names and where the standard of survey and assessment may be variable. For example, the lack of a standard approach to these preliminary ecological assessments may lead to uncertainty on the part of developers and regulators (planning authorities and government agencies) as to the level of ecological survey required in a particular situation and whether sufficient survey effort has been made.

Terminology

Many terms are used to describe preliminary survey and reporting: Baseline surveys, Extended Phase 1 habitat survey; Constraints Survey; Ecological Site Assessment; Ecological Site Appraisal; Ecological Scoping Survey; Walkover Survey. Some of these terms are fairly old and are now rarely used, although they are still encountered from time to time, *e.g.* walkover survey. Furthermore, constraints or scoping surveys (although they may vary in content) are unlikely to include any element of valuing of features, and walkover, scoping and constraints survey are considered to be too limited or the terminology too loose. Consequently some standardisation is required to reflect the minimum works at this stage of the process, as set out below.

'Ecological (Site) Assessment' is open to confusion with the more detailed Ecological Impact Assessment and does not help to clarify what is being undertaken. Nevertheless, some form of robust ecological approach is required to inform planning decisions. It is therefore considered that either Extended Phase 1 habitat survey or Ecological Appraisal is the most appropriate description of this type of assessment, although the former implies no evaluation, and is thus insufficient for purposes such as the Code for Sustainable Homes and BREEAM (Building Research Establishment Environmental Assessment Method) assessments. 'Ecological Appraisal' is considered the term most suited to describing a preliminary or baseline level of survey and assessment. The word 'site' has been omitted as it is common practice to include an element of survey beyond a site boundary, even if this is only a visual assessment from within the proposed site.

Objectives

This document provides best practice guidance for those undertaking preliminary ecological appraisals, setting out the minimum standards required. It provides

1 Also referred to as Baseline ecological surveys, Phase 1 or Extended Phase 1 Habitat Survey/Constraints Survey/ Ecological Site Assessment/Ecological Site Appraisal/Ecological Scoping Survey/ Ecological Site Walkover Survey

recommended terminology for consistency across baseline appraisals to aid developers and planning authorities.

Applications

Examples of situations where these appraisals would be undertaken are:

- Proposed developments:
  - where it is considered that EcIA is not required;
  - to establish baseline conditions and determine the importance of ecological features present (or those that could be present) within the specified area, as far as is possible;
  - to establish any requirements for detailed/ further surveys;
  - to identify key constraints to the project and make recommendations for design options to avoid significant effects on important ecological features/resources at an early stage;
  - to identify the mitigation measures as far as possible, including those that will be required, and those that may be required (based on results of further surveys or final scheme design); and
  - to identify enhancement opportunities.
- Site management plans:
  - to identify and evaluate the features of interest.
- Code for Sustainable Homes/BREEAM (Land use and ecology credits):
  - gathering ecological baseline data.

The results of baseline appraisals are potentially of great importance as they often form the basis for further ecological surveys and EcIAs/Environmental Impact Assessments (EIA) and for the setting of site management objectives. Consequently, without a consistent approach, important ecological features may be 'scoped out' or inadequately surveyed at this stage and are then overlooked in subsequent ecological assessments.

It is important to note that most, if not all, planning applications will require an assessment of all ecological effects. Therefore, in most cases, a Preliminary Ecological Appraisal, as described here, will not provide all of the information required by the regulatory bodies to determine a planning application. However, in many cases it can be a helpful first step in informing a developer of the key ecological constraints, design options, requirements for further surveys and mitigation measures. It can also be useful in providing a basis for consultation with the determining authority and other consultees on these same issues.

The level of detail required for any ecological survey and assessment will depend on the nature of the development, statutory requirements and the needs of the developer and the regulator.

Obligations and Responsibilities

Prior to the commencement of any project, written agreement of respective obligations and responsibilities between the parties involved is necessary to establish the contractual relationship. This needs to be on a firm foundation in view of possible negligence claims and liabilities under statute (*e.g.* Civil Liability Contribution Act 1978, Limitation Act 1980 and Latent Damage Act 1986) and any disagreement arising during the contract period. A contract document provides both consultant and client with protection under contract law. The work required to be undertaken should be set out clearly in a contract. Advice on this can be found in the CIEEM Professional Guidance Series No. 7 *Model Service Agreements* and Professional Guidance Series No. 11 *Contract Advice Notes Part I*. Those undertaking survey work should ensure that they meet the minimum species survey standards as set out in the CIEEM Competencies for Species Survey guidance documents (2011).

Section 2 – Outline of the Process

Introduction

Ecological surveys should be undertaken by qualified professionals, experienced in ecological survey, with an understanding of nature conservation legislation and planning and recognised by a relevant professional body such as CIEEM. Where animal species are to be surveyed the ecologist should also be able to demonstrate that they meet the minimum knowledge, skills and practical experience requirements as set out in the IEEM Technical Guidance Series *Competencies for Species Survey*.

Method

This following advice in relation to a report's structure and contents is in accordance with the CIEEM Professional Guidance Series No. 9 *Guidance for Ecological Report Writing* and Professional Guidance Series No. 10 *Guidance on Metadata Standards: Reporting, Sharing and Archiving Ecological Data*.

The method employed should be clearly stated and should allow for the following:

1. A desk study to identify notable (defined below) or protected sites habitats or species potentially affected by the proposal under consideration.

2. Survey based on the Phase 1 habitat survey (JNCC 2010) or equivalent, *i.e.* within the survey area every parcel of land is classified, recorded and mapped in accordance with a list of ninety specified habitat types using standard colour

codes[2] to allow rapid visual assessment of the extent and distribution of different habitat types. Whilst a Phase 1 habitat survey is appropriate in the majority of cases, there are situations where it may not be particularly helpful, such as where the study area comprises existing residential properties and gardens – in these circumstances an alternative way of recording and presenting the basic habitat information should be used.

3. An extension of this basic survey methodology to provide further details in relation to notable or protected habitats present within the survey area, or in relation to habitats present that have the potential to support notable or protected species.

4. Some description of habitat condition *e.g.* woodlands with a good layered structure or with standing dead timber; grasslands grazed, rank or 'tussocky'; ponds shaded or not; watercourses fast or slow flowing, poached banks; *etc*. These observations add value and indicate the type of management that may be needed in future.

5. Clarity as to the range of species and habitats under consideration. It may be considered relevant to include further habitats and species, besides those that are rare or legally protected, *e.g.* Biodiversity Action Plan (BAP) habitats and species, and Birds of Conservation Concern (RSPB, 2009).

6. Target notes to provide supplementary information on features too small to map, or supplementary details, for example relating to species composition, structure and management. Target notes may also be used to highlight important reference points and to help the reader navigate around the area.

7. Identification and mapping of marine and/or coastal habitats is a highly specialised task. A separate survey of these is recommended following *The Marine Habitat Classification for Britain and Ireland* (JNCC, 2005). Where the ecologist(s) possess adequate expertise, a preliminary attempt may be made to identify accessible areas of littoral/inter-tidal zone using this classification system.

8. Quality control: there should be a clear audit trail detailing:

    - the surveyor(s);
    - surveyors' licence number(s);
    - the report author(s);
    - key dates *e.g.* any site visits;
    - the quality controller(s); and
    - who signs it off.

9. Clear definitions of the terminology used; for example:

    - 'Zone of influence', 'survey area' and 'desk study area' should all be defined in terms of the site and its surrounds.

    - The criteria for valuing habitats and species should be defined (IEEM, 2006).

10. Relevant biodiversity data obtained as part of the site survey should be submitted to Local Environmental Record Centres (subject to approval by landowners/clients where relevant).

Scope

When identifying the extent of the area under consideration within the desk study, the following should be considered:

- Rather than set prescribed distances or other parameters, the scope and area that should be considered for study should be based on the professional judgment of the ecologist leading the Appraisal. It will depend on many factors (see further below), including: the characteristics of the site subject to appraisal, its surroundings and the nature of the changes proposed. It is therefore essential that both the basis for the decision as to the scope and area of the appraisal is clearly set out and fully justified, and, any assumptions or limitations are described, so that decision makers and consultees can understand the basis of the appraisal and consider whether it is adequate for the stated purpose.

- Records for notable and/or protected species within 1 - 2 km are usually considered to be of greatest relevance within most studies. In other cases, such as for small sites with limited ecological interest and localised effects, a smaller search area may be appropriate (such as within 500 m). Ecological judgement should dictate where various ecological/habitat factors indicate that this distance should be increased: such as habitat connections to site, *e.g.* where otters have been recorded via fluvial networks, or potential for visiting flocks of notable birds where suitable habitats exist within the survey site, or important flight routes between the site and bat roosts (see example involving greater horseshoe bats *Rhinolophus ferrumequinum* on page 25 of *Bat Mitigation Guidelines* - Mitchell-Jones 2004).

- Attention should be focussed on connections between the survey area and nearby habitats, especially aquatic habitats and wetlands both upstream and downstream via fluvial networks or other hydrological networks. Potential effects within the water table should also be considered

2 See JNCC website for amendments for GIS phase 1 palette and other mapping information.

e.g groundwater dependent raised bogs and other groundwater dependent wetlands. Connections may also exist between a site and mineral workings which could depress the water table for some distance around them *e.g.* wet sand and gravel workings.

- Account should be taken of valuation of ecosystem services following documents published by Defra (Defra, 2007a and Defra, 2007b) and on the Millennium Ecosystem Assessment website (Millennium Ecosystem Assessment 2005). This refers to the conditions and processes through which natural ecosystems sustain and fulfil human life. These documents set out a systematic approach to the assessment of impacts on the natural environment to ensure that the true value of ecosystems and the services provided are taken into account in policy decision-making.

Description of the geographical extent and zone of influence considerations may include the following:

- **Purpose of study** *i.e.* to inform development scheme, record the ecological baseline and/or identify key features.

- **Study area** should be appropriate to the likely impact of the development and encompass the proposed development site (or ownership boundary) and a buffer zone. (This decision will be based on ecological judgement; 50 m may be considered sufficient in order to avoid the possibility of adverse impacts to certain species, *e.g.* badger setts, although greater distances than this may provide useful context for the site).

- The **scope** of this type of survey may vary considerably and additional elements may form part of the study depending on the requirements for the area under assessment or to provide contextual information to allow the importance of a resource to be determined.

- The need to assess ecological **'value'** of features present in accordance with CIEEM 2006 although this will usually be provisional upon data to be obtained from further survey effort. **It should be made very clear which features can and cannot be valued - some features cannot be valued without further survey.**

- As far as possible any **future requirements**, such as an EcIA or assessment of 'Land and Ecology' credits that may be awarded as part of BREEAM or Code for Sustainable Homes assessments[3].

- Identification of any **invasive** plant or animal species (such as Japanese knotweed *Fallopia japonica* or other species listed on Schedule 9 of the Wildlife and Countryside Act) that could have implications for works on the site.

Limitations

It is important to set out clearly what the assumptions and limitations of the survey are, for example:

- incomplete survey of all/some species and habitats present;

- The time of year/behaviour may mean that certain species and habitats are not properly identified (however, the scoping element should identify the potential of species to be present). These surveys are often undertaken in the winter as this provides good 'lead-in' time for planning Phase 2 surveys in the spring/summer, but obviously there is potential to overlook botanical and other species interests at this time of year;

- weather conditions at time of survey; and

- data that may not have been obtained in the timetable of the study; and

- where there have been changes, for example to site boundaries, it should be clear that the recommendations relate to plans/proposals as provided by the client at the time of the survey; any subsequent changes may alter those recommendations and the proposed mitigation/ enhancement measures.

Desk Study

The following information sources should be consulted. Obtaining data through desk study will help to determine not only the geographical scope of the survey but also the features to be searched for. Data obtained from these sources should be fully referenced and used in compliance with the terms and conditions relating to its commercial use.

- National – MAGIC and NBN Gateway websites;

- Local – Environmental Records Centres (ERCs), County Councils, Unitary Authorities *etc.*; and

- Local wildlife groups, *e.g.* mammal, herpetofauna, bat or botanical groups.

Results

Descriptive Text

- Text descriptions of notable species and habitats that occur or may potentially occur within the survey area may vary considerably in length and level of detail depending upon their intended use.

3 See: http://www.breeam.org/page.jsp?id=66

- It may be necessary to mark the report as confidential where locational details are provided of sensitive species (where the locations need to be kept confidential due to the risk of human interference) including the location of badger setts.

- Photographs should be used in a report as they increase understanding of the accompanying text.

Habitat Mapping and Target Notes

A clear map should be provided based on the *Handbook for Phase 1 Habitat Survey* (JNCC 2010).

The following should be identified using target notes:

- features of particular ecological interest *e.g.* locations of protected species/habitats;

- features too small to map;

- features categorised within a given Phase 1 habitat type, but atypical or interesting for any reason *e.g.* a small spring/flush within a large area of fen or blanket bog;

- transitional habitats not falling clearly into a specific habitat, or unclear boundaries between habitats;

- stands of invasive plant species; and

- reference points to help the reader navigate descriptions of large and/or complex areas.

Evaluation of Ecological Features and Identification of Potential Impacts

- An indication of the ecological value of features present, where required, should be undertaken based on the *Guidelines for Ecological Impact Assessment* (CIEEM 2006). This evaluation should be undertaken by the ecologist(s).

- An assessment may be required at this stage, using all available data and the professional judgement of the ecologist concerned, to identify any ecological features that may be subject to impacts (adverse or positive). In particular, this should be considered in the light of the legislative or planning context (where relevant) – see below. Such feedback to the developer is valuable in that it can indicate the need for design changes to avoid adverse effects.

- Further survey effort may be required to assess value for particular features.

- Features that have been identified as being present, or potentially present, may be scoped out at this point if it is considered that no impacts are likely, but it should be remembered that 'absence of evidence is not evidence of absence'. It may be appropriate to state that this appraisal relates specifically to the original brief and proposal description. With phased proposals where subsequent design changes are likely, it should be noted that a re-appraisal will be needed should proposal details change.

- This section may also include a preliminary consideration of the ecological features as 'ecosystem services'. 'Valuation' is a widely used tool in determining the impact of human activities on an environmental system, by assigning an economic value to 'ecological services', and may form part of impact assessment subsequent to the ecology appraisal.

Recommendations for Further Surveys, General Mitigation and Possible Enhancements

- Clear recommendations should be made here for any further surveys of specific habitats, species groups or species. It should be stated that in the case of certain protected species it may well be necessary to obtain a licence from the relevant Statutory Nature Conservation Organisation (SNCO).

- An initial outline of measures that are likely to be required to avoid or to mitigate for potentially adverse impacts identified (where further surveys are not required) can be made at this stage.

- There may be a requirement by the planning authority to provide compensation for any negative impacts or, in any event, to require a net biodiversity gain in accordance with Government policies. These can only be indicative at the preliminary ecological appraisal stage as they are reliant on more detailed assessment. However, identification of these is desirable in order to begin to incorporate these into the scheme design at as early a stage as is possible. It is imperative that a professional ecologist (recognised by the relevant professional body) is part of the design team.

- A survey calendar can be included here to indicate optimal times of year when a particular species/ species group or habitat may be surveyed.

- Developers should use this initial report to enter into discussions with the planning authorities.

Legislative and Planning Context

Protected Habitats and Species

- It should be clearly stated where there is potential for contravention of national or international nature conservation and related legislation or policy. Further survey work may be required to establish this fully.

Notable Habitats and Species

- Material considerations in planning and similar types of decisions can be influenced by factors such as local designations, UK or County BAP Priority habitats or species, and species listed in the UK Red Data Book or RSPB Birds of Conservation Concern. Collectively these may also constitute 'notable' species. There is likely to be some degree of overlap between these and legally protected species, although a large number of rare habitats or species do not receive direct legal protection.

- BAP designations relate to species or habitats that are not necessarily of high ecological value but which are nonetheless regarded as being of conservation concern at the national or local level, and for which Biodiversity Action Plans have been prepared.

- The professional judgement of the ecologist will be required to identify the key features in relation to the survey area and those that may be adversely affected by the proposals.

Planning Context

The BAP priority habitats and species which governments particularly expect to be taken into account in planning and related decisions include:

- England
  - NERC Act 2006, Section 41
  - *National Planning Policy Framework* (2012)
  - *Circular 06/05 Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System* (2005)
  - *Biodiversity 2020* (2011)
  - *The natural choice: securing the value of nature* (2011) (Natural Environment White Paper)
  - NB: *Planning Policy Statement 9* (PPS9) is now obsolete

- Northern Ireland
  - *Northern Ireland Biodiversity Strategy 2002*
  - *Planning Policy Statement (PPS) 2 – Planning and Nature Conservation* (under review)

- Republic of Ireland
  - Planning Act 2009
  - Wildlife Act 1976 (amended 2000), Habitats Regulations (currently being amended)
  - National Biodiversity Plan
  - Actions for Biodiversity 2011-2016 - Ireland's 2nd National Biodiversity Plan
  - Sustainable Rural Housing Guidelines
  - NPWS Appropriate Assessment Guidelines

- Scotland
  - *Scotland's Biodiversity: It's in Your Hands - A strategy for the conservation and enhancement of biodiversity in Scotland* (2004)
  - The Scottish Biodiversity List under Section 2(4) of the Nature Conservation (Scotland) Act 2004
  - *Scottish Planning Policy* February 2010 and - *Planning Advice Note (PAN) 60 - Planning for Natural Heritage 2000*.

- Wales
  - *Wales Biodiversity Framework* (2010)
  - Section 42 - NERC Act 2006
  - *Planning Policy Wales* - June 2010, Edition 2, Chapter 5
  - *Technical Advice Note (TAN) 5 - Nature Conservation and Planning* (2009)
  - *Environment Strategy for Wales* (2006)

Wherever relevant, enhancement suggestions should be linked to goals and targets contained within local planning policy documents (those setting out biodiversity objectives and policies to conserve and enhance biodiversity at the regional and sub-regional levels), and also to targets for habitat improvement/ creation in local BAP targets. These include targets for the restoration of and re-creation of priority habitats and the recovery of priority species populations; and identify any areas or sites for the restoration or creation of new priority habitats that would contribute to regional targets, and support this restoration or creation through appropriate policies.

Referencing

The reference list for Preliminary Ecological Appraisal reports should include the standard references for each species or habitat as specified in IEEM *Sources of Survey Methods* (http://www.ieem.net/sources-of-survey-methods-sosm-).

All UK and legislation for countries within the UK can be viewed at: http://www.hmso.gov.uk/legis.htm, and for Ireland in the Irish Statute Book at: http://www.irishstatutebook.ie.

References

Actions for Biodiversity 2011 – 2016, Ireland's 2nd National Biodiversity Plan

Biodiversity 2020: A strategy for England's wildlife and ecosystem services
http://www.defra.gov.uk/publications/2011/08/19/pb13583-biodiversity-strategy-2020/

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Department of the Environment, Heritage and Local Government (Revised 2012) *Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities*

Government of Ireland (April 2005) *Sustainable Rural Housing Guidelines for Planning Authorities*

Institute of Ecology and Environmental Management, Professional Guidance Series (CIEEM http://www.cieem.net/) [Members only]

Institute of Ecology and Environmental Management (2006) *Guidelines for Ecological Impact Assessment in the United Kingdom* (CIEEM website – as above)

Institute of Environmental Assessment (1995) *Guidelines for Baseline Ecological Assessment*. E & FN Spon. London.

Irish Nature Conservation Law, National Parks & Wildlife Service

Joint Nature Conservation Committee *Phase 1 Habitat Classification* http://jncc.defra.gov.uk/page-4258

Joint Nature Conservation Committee (2005) *The Marine Habitat Classification for Britain and Ireland* version 04, http://www.jncc.gov.uk/default.aspx?page=1584.

Joint Nature Conservation Committee (2010) *Handbook for Phase 1 habitat survey - a technique for environmental audit*, ISBN 0 86139 636 8

Millennium Ecosystem Assessment (2005) – for further details visit http://www.maweb.org/en/About.aspx

Natural Environment and Rural Communities (NERC) Act (2006) (http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1)

Northern Ireland Executive (August 2002) *Northern Ireland Biodiversity Strategy* (http://www.ni-environment.gov.uk/nibs2002.pdf)

RSPB (2009) *Birds of Conservation Concern 3*. RSPB Sandy, Beds. http://www.rspb.org.uk/Images/BoCC_tcm9-217852.pdf

Scottish Biodiversity Forum (2004) *Nature Conservation (Scotland) Act 2004* (http://www.biodiversityscotland.gov.uk/pageType2.php?id=35&type=2&navID=92)

The National Planning Policy Framework http://www.communities.gov.uk/publications/planningandbuilding/nppf

The Natural Choice: securing the value of nature http://www.official-documents.gov.uk/document/cm80/8082/8082.asp

The Scottish Government (2000) *Planning for Natural Heritage: Planning Advice Note 60 (PAN 60)* (http://www.scotland.gov.uk/Publications/2000/08/pan60-root/pan60)

Welsh Assembly Government (2009) *Technical Advice Note (TAN) 5 - Nature Conservation and Planning*

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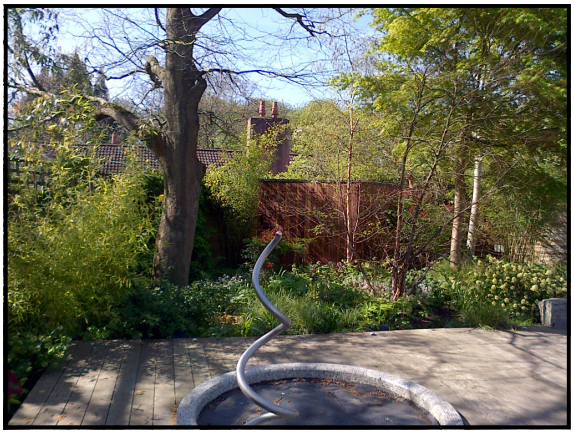
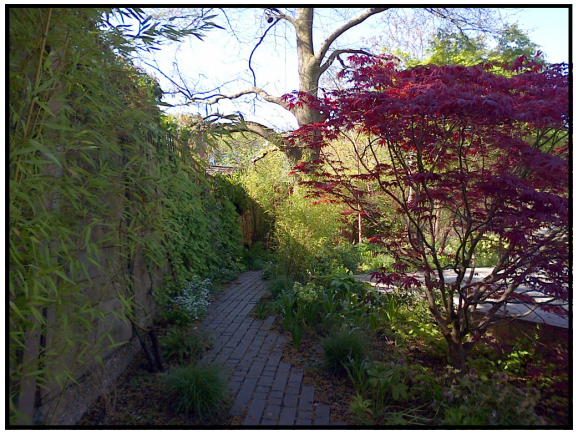
APPENDIX 4

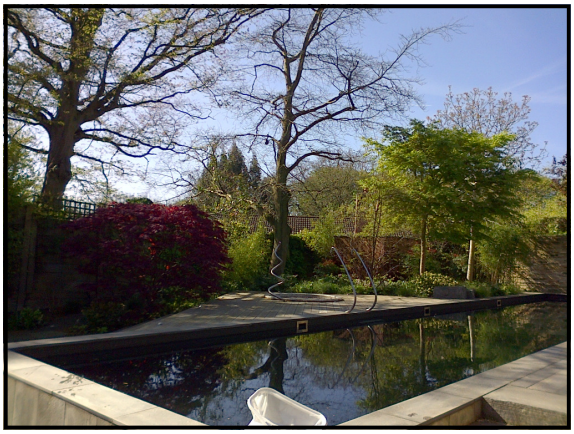
Site Photographs



1. Beech T1 looking south west.



2. Beech T1 looking west.



3. Beech T1 looking south.

4. Beech T1 looking south.

5. Beech T1 centre view from the garden of Dormers.

6. Mulberry T2 from the garden of the Wallis House.

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