BJH.0435

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ARBORICULTURAL METHOD STATEMENT & TREE PROTECTION PLAN REPORT

for

111 London Road, Cowplain

*- prepared on behalf of **Jemima Jessup** -*

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ARBORICULTURAL METHOD STATEMENT (AMS) & TREE PROTECTION PLAN (TPP)
Including Arboricultural Impact Assessment (AIA) & Tree Constraints Plan (TCP)

Client	**Jemima Jessup**
Site Location	**111 London Road, Cowplain**
Project Arboricultural Consultant:	Bernie Harverson *M.Arb.,*
Date Report Prepared	July 2010

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BH2	Root Protection Area Schedule (**RPA** in accordance with – **Table 2** of BS5837)
BH3	Arboricultural Impact Assessment (**AIA**) & Tree Constraints Plan (**TCP**) – **BH.01/02**
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BH5	Tree Protection Plan–**BH.03** + BS5837 Figure 2 & 3 Diagrams **+** Example Warning Notices
BH6	BS5837 Extracts – including Table 3 and Sections 13 &14 & 15 & NJUG10 Extracts
BH7	Qualifications & Experience

1.0 INTRODUCTION & CLIENTS BRIEF

1.1 My client – Jemima Jessup - is the owner of the land at 111 London Road, Cowplain and seeks approval to redevelop the site for residential housing purposes.

1.2 I have been commissioned to consider the impact that development might have on the existing tree stock both on and adjacent to the site.

1.3 I am instructed to prepare a **Method Statement & Tree Protection Plan -** based on the planning layout submitted to me by **AG Design Ltd.**

1.4 My work is compiled in accordance with the Recommendations contained within BS5837:2005 and this report follows the sequential progression through this document with Sections 7 to 15 in the **AMS & TPP.**

2.0 DOCUMENT DISCLOSURE STATEMENT

2.1 A copy of the Land Survey Topographical drawing has not been directly provided to me but has formed the base for all client drawings.

2.2 A copy of the Planning Layout drawing as prepared at **1:200 scale by AG Design Architects Limited -** has been provided to me for the purposes of my work and I rely totally on the accuracy of this drawing.

3.0 LAND SURVEY & TREE SURVEY

3.1 A Land Survey Topographical drawing has been prepared and to the best of my knowledge this accords with the requirements of BS5837 as listed at Section 4 – *Paragraphs 4.1.1 to 4.1.5*.

3.2 I conducted a full Tree Survey exercise on **6th July 2010** in accordance with the requirements of BS5837 as listed at Section 4 – *Paragraphs 4.2.1 to 4.3.7. and Cascade Chart Table 1* – a copy of the survey schedule can be viewed at **appendix BH1.**

3.3 Additional Considerations –

- *BS5837 Para .4.4.1* – **I found no trees on site that might represent an immediate and serious hazard to life or property although some will require remedial surgery to deal with dead wood and dieback to make them safe.**
- *BS5837 Para .4.4.2* – **There are no trees on the development site which are suitable candidates for transplanting.**
- *BS5837 Para .4.4.3* – **There are no veteran trees on the development site.**

4.0 TREE CONSTRAINTS PLAN – RPA & ABOVE GROUND CONSTRAINTS

4.1 The RPA for each surveyed tree and group has been calculated using the Tree Survey data and by reference to Table 2 of BS5837.

4.2 A copy of the RPA schedule can be viewed at **appendix BH2** and the data has been applied to the TCP prepared for this current scheme.

4.3 In compiling the data and applying it to the TCP full consideration has been given to BS5837 – *Paragraph 5.2.4 and items a) to e).*

4.4 In this regard it is to be noted that in respect of item *e)* if trees and groups have crown spreads which exceed the specified RPA then this has been taken into account on the TPP for those trees which are to be retained and either an increased protection zone applied to encompass the crown or where deemed appropriate *'access facilitation'* tree surgery works specified that will avoid unnecessary contact and damage from site traffic during the demolition and/or construction works.

5.0 ASSESSMENT OF TREE CONSTRAINTS –AIA & DESIGN ISSUES

5.1 An AIA report was not prepared by me for this project. Although a previous assessment linked to redevelopment of 109 & 111 by another client back in 2008 has informed and guided the design process leading to the current layout submission.

5.2 At *Paragraph 6.2.2 of BS5837* there is a recommendation that *'Even if there are no trees on the site, areas for future planting should be plotted on the TCP and protected from damage, especially soil compaction due to construction activity, by the erection of barriers and/or ground protection. Where such pre –development protection is not implemented, prior remediation measures should be employed, such as soil ripping with a winged-tined plough or subsoil aeration.'* In practice this is extremely difficult to implement and the best that can be hoped for is that the ground is adequately protected and then appropriate decompaction, aeration and mulching undertaken at the completion of works during the soft landscaping works phase. The TPP may where appropriate indicate notional areas outside the RPA's where appropriate ground protection measures might be implemented to protect the ground during the course of demolition and construction works in anticipation of subsequent new tree planting.

5.3 At *Paragraph 6.2.3 of BS5837* there is a recommendation that the following matters are taken into consideration:-

a) The presence of tree preservation orders or conservation area protection.

- I am not aware of any extant **Tree Preservation Order or Conservation Area** cover on this site but this should be verified before any tree works that may be recommended within this report are undertaken.

b) The effect that development proposals may have on the amenity value of trees, both on and near the site.

- This scheme will entail the loss of a number of poor quality trees and groups from the central areas of this overgrown and derelict site.

c) The above and below ground constraints.

- Fully assessed and a management strategy devised to minimise damage – see Section 6 of this report for further information in this respect.

d) The construction of the proposed development.

- As shown on the planning layout drawings and detailed in Section 6.0 of this report.

e) Whether the design and/or construction of the proposed development can be modified to accommodate retention of trees that would otherwise be at risk or lost. This includes appropriate tree surgery works that acceptably mitigate adverse effects caused by trees.

- NO – given the narrow nature of this Plot the removal of the poor quality trees and groups is inevitable in order to achieve a viable layout.
- It would also not be good planning practice to try to incorporate (low) C grade and (fell) R graded trees and groups into a new layout.
- ***f) Infrastructure requirements, e.g. easements for underground or above ground services; highway safety and visibility splays; and other infrastructural provisions, such as substations, refuse stores, lighting, signage and CCTV requirements***.
    - To the best of my understanding all utility services will be connected outside of the RPA's for the trees and hedges which are to be retained on this site.

g) The end use of the space

- This is ultimately an issue for Planners to consider but in arboricultural terms it is my opinion that the trees which are indicated for retention can exist in harmony with the proposed redevelopment without pressure to prune or fell.

h) Whether tree loss resulting from the development proposals can be acceptably mitigated by new tree planting.

Yes – it should be possible to incorporate some planting of small sized trees within the scheme. It will not be possible to plant a similar number of tree and groups as will have to be removed, but given that they are of poor quality and low grading and hardly visible from a point of public access the limited planting of a few quality trees should be adequate to offset their loss.

5.4 **Proximity of trees to structures**

This is to ensure that above ground the existing shade cast by the tree crowns is reasonable and acceptable and allowance has been made for their future growth and development without there being pressure to prune or fell or to impinge on useable space. In this instance the retained trees are well clear of the buildings and there will be no significant shading of garden areas.

6.0 ARBORICULTURAL METHOD STATEMENT & TREE PROTECTION PLAN

6.1 The finalised planning layout drawing has been provided and an assessment made as to the viability of retaining trees as part of this layout in order that they meet the RPA requirements of BS5837.

6.2 The data is presented here in tabular format:-

Key: RSAM = Remove for sound arboricultural management reasons RTFD = To be removed to facilitate development UF of. = Under footprint of development

Tree No	Species	Cat	S or M	Stem Diam mm	BS5837:2005 Min.Radial Prot. Zone m	BS5837:2005 Min.Root Prot. Area m^2	Distance from Site Features (see key above)	Can Tree Be Retained
T1	Flowering Cherry *Prunus species*	**R**	S	250	n/a	n/a	n/a	**NO – RSAM**
Grp 1	Portugal Laurel & Lawsons Cypress	C2	M	350	3.5	38.5	UF of Plot 2	**NO – RTFD**
T2	Norway Spruce *Picea abies*	**R**	S	260	n/a	n/a	n/a	**NO – RSAM**
T3	Apple *Malus species*	**R**	M	300	n/a	n/a	n/a	**NO – RSAM**
T4	Apple *Malus species*	**R**	M	240	n/a	n/a	n/a	**NO – RSAM**
T5	Pittosporum *Pittosporum tenuifolium*	C1	M	200	2.0	12.6	UF of Plot 2	**NO – RTFD**
Grp 2	Fruit Trees *Malus & Prunus spp.*	**R**	M	250	n/a	n/a	n/a	**NO – RSAM**

Tree No	Species	Cat	S or M	Stem Diam mm	BS5837:2005 Min.Radial Prot. Zone m	BS5837:2005 Min.Root Prot. Area m^2	Distance from Site Features (see key above)	Can Tree Be Retained
T6	Pedunculate Oak *Quercus robur*	B1	S	est 500	6.0	113.1	7m to patio 10m to Plot 2 7.5m to parking bays	**YES**
Grp 3	Pittosporum Mixed Shrubs Macrocarpas	**R**	M	250	n/a	n/a	n/a	**NO – RSAM**
T7	Purple Plum *Prunus cerasifera Nigra*	C1	M	250	2.5	19.6	UF of car parking to Plot 2	**NO – RTFD**
Grp 4	Mixed Conifers and shrubs	C2	M	150	1.5	7.1	UF of new access drive	**NO – RTFD**
Grp 5	Myrobalan Plums Mixed Shrubs	**R**	M	170	n/a	n/a	n/a	**NO – RSAM**
T8	Horse Chestnut *Aesculus hippocastanum*	**R**	M	700	n/a	n/a	n/a	**NO – RSAM**
Grp 6	Elderberry Norway Maple Mixed Conifers	**R**	S	170	n/a	n/a	n/a	**NO – RSAM**
T9	Hawthorn *Crataegus monogyna*	**R**	M	250	n/a	n/a	n/a	**NO – RSAM**
Grp 7	Myrobalan Plum	C2	M	170	1.7	9.1	0.5m to new access drive	**NO – RTFD**
Grp 8	Leyland Cypress	C2	M	350	3.5	38.5	UF of Plot 4	**NO – RTFD**

Tree No	Species	Cat	S or M	Stem Diam mm	BS5837:2005 Min.Radial Prot. Zone m	BS5837:2005 Min.Root Prot. Area m^2	Distance from Site Features (see key above)	Can Tree Be Retained
T10	Pedunculate Oak *Quercus robur*	**R**	S	600	n/a	n/a	n/a	**NO – RSAM**
Grp 9	Grey Willows	C2	M	350	3.5	38.5	UF of Plot 3	**NO – RTFD**
Grp 10	Birch Oak	B2	S	150	1.8	10.2	10m to patio 13.5m to Plot 3	**YES**
Grp 11	Leyland Cypress	C2	M	180	1.8	10.2	3m to shed base 25m to Plot 4	**YES**
T11	Pedunculate Oak *Quercus robur*	B1 / C1	S	600	7.2	162.9	10m to shed base 31m to Plot 4	**YES**
T12	Sycamore *Acer pseudoplatanus*	**R**	M	400	n/a	n/a	n/a	**NO – RSAM**
T13	Pedunculate Oak *Quercus robur*	B1 / C1	S	750	9.0	254.5	9m to shed base(relocated) 30m to Plot 3	**YES**
T14	Pedunculate Oak *Quercus robur*	B1 / C1	S	750	9.0	254.5	9m to shed base(relocated) 30m to Plot 3	**YES**

6.3 **NO – RSAM**

- **T1; T2; T3; T4; T8; T9; T10; T12 + Grps 2; 3;5 & 6 :**Under the BS5837 recommendations these trees do not form part of the planning consideration as they are R grade and have less than 10 years anticipated life expectancy and should be removed for sound arboricultural management reasons regardless of any re-development proposals.

6.4 **NO – RTFD**

- **T5 & T7 + Grps 1; 4; 7; 8 & 9:** All are low C graded trees and groups that have very limited value and would be under the footprint of the proposed buildings and infrastructure layout. None are of significant value that they should be allowed to constrain a layout of planning merit and sufficient mitigation planting can be undertaken within the final soft landscape works to compensate for their loss.

6.5 **YES**

- **Trees T6; T11; T13; T14 + Grps 10 & 11 -** can all be retained and afforded full protection in accordance with the BS5837 recommendations (**see Plan BH.03 for details**).

7.0 PRE-DEVELOPMENT TREE WORK and WORKING WITHIN THE RPA

7.1 Undertake all tree work as listed in the Tree Works Schedule – **see appendix BH4**. Inclusive of all development facilitation felling requirements and all tree pruning works for facilitation or access or health and safety reasons.

7.2 The tree surgery specialist contractors are to be given clear guidelines and a remit that prohibits heavy plant (Lorries, Cranes and Work Platforms) tracking through the site within tree protection zones where there is no existing hard surfacing protection.

7.3 If there are to be heavy pedestrian movements within the RPA's then Ground Protection measures in accordance with Section 9.3.2 of BS5837 will need to be applied – *'installation of ground protection in the form of a single thickness of scaffold boards on top of a compressible layer laid onto a geotextile, or supported by scaffold..'*

7.4 *'For wheeled or tracked construction traffic movements within the RPA the Ground Protection should be designed by an engineer to accommodate the likely loading and may involve the use of proprietary systems or reinforced concrete slabs.'*

7.5 Where trees are to be felled in proximity to others that are to be retained it will be necessary to use special dismantling techniques to avoid both above and below ground damage, lowering sections to the ground in a careful manner with the aid of slinging ropes.

7.6 Unless otherwise specifically instructed - all cut wood and arisings are to be removed from site and safely disposed of.

7.7 Tree stumps within RPA's are to be ground out or retained in situ and **NOT grubbed out** to avoid damage to the root systems of retained trees.

8.0 CONSTRUCTION EXCLUSION ZONE : BARRIERS and GROUND PROTECTION

8.1 Protective fencing barriers are to be located exactly as specified on the **Tree Protection Plan BH03** and in full accordance with the recommendations contained within British Standard 5837:2005- Figure 2.

8.2 A copy of the Tree Protection Plan is to be pinned up in the temporary offices/mess hut on site for all site staff to see. The area within the construction exclusion zone is to be regarded as **sacrosanct** and the fencing shall not be taken down or relocated at any time, unless this has been agreed as part of the planning application consent process and is detailed in writing and shown on a plan.

8.3 The following prohibitions shall apply within the area enclosed by the Tree Protection Fencing :-

- **No** mechanical digging or scraping (once the initial ground cover vegetation has been cleared and the site fenced of).
- **No** storage of plant, equipment or materials
- **No** vehicular or plant access
- **No** fire lighting within 10m of tree canopies
- **No** handling, discharge or spillage of any chemical substance, including cement washings and vehicle washings within 10m
- **No** action likely to cause localised water-logging
- **No** alteration of ground levels
- **No** construction of hard surfaces
- **No** attachment of boards, hoarding, cables or notices or fencing to trees

Special care is to be taken on sloping ground where spillages could run towards the trees – a collecting channel dug along the outer line of the protective fencing would be one method of avoiding such damage.

8.4 Barriers must be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s).

8.5 Special attention must be paid to these barriers during the course of works to ensure that they remain in situ and rigid and complete. Any breaches or failures are to be repaired immediately and no works undertaken in the vicinity until they have been fully restored/repaired.

8.6 Barriers should consist of a scaffold framework, well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3m. Onto this Weldmesh or Wooden Hoarding Panels should then be securely fixed with wire or scaffold clamps.

8.7 It may be appropriate on some sites (not applicable here) to use temporary site office buildings as components of the tree protection barriers along with the necessary ground protection measures beneath them. In such cases all doors must open outwards away from the trees with no access into the RPA and all discharges (clean or effluent) must be piped outside the RPA and into an existing drainage system. No excavation will be permitted within the RPA to make water or sanitary pipe connections to the offices or toilet blocks.

8.8 Where specified on the Tree Protection Plan – Ground Protection measures must be applied in accordance with Figure 3 and Sections 9.3.2 & 9.3.3 of BS5837 please see copy at **appendix BH5.**

9.0 AVOIDING DAMAGE TO STRUCTURES BY TREES : DIRECT or INDIRECT ACTION

9.1 Buildings should be constructed to allow for future growth of existing; planted or self sown trees.

9.2 Direct damage can be caused by :-

a) the disruption of underground services and pipelines

b) displacement of underground services and pipelines

c) the impact of branches with the superstructure

d) structural failure of the tree

In this respect the Tree Survey exercise will have identified any trees within categories c) or d) and tree works advised accordingly to remedy risk.

Items a) and b) can be avoided by judicious design and careful placement of utility services and by adherence to Table 3 planting distances.

9.3 Indirect damage by root action causing the shrinkage or swelling of clay soils can be avoided by adherence to the new tree planting distances specified under Table 3 – see at **appendix BH6;** and by having engineer designed foundations to accord with NHBC Standards.

10.0 DEMOLITION & CONSTRUCTION IN PROXIMITY TO EXISTING TREES

10.1 This project involves both a Demolition and a Construction phase.

10.2 **Demolition Phase –**

Specific Actions:

- All site scrub clearance operations and tree surgery works will have been undertaken prior to the site being handed over to the Demolition Contractors (see at 7.1 above) so it will be possible to access the areas which need to have Protective fencing erected.
- Prior to commencement of work on site a check is to be made to verify that all of the protective fencing barriers are where they should be by reference to the Tree Protection Plan and that they are in good order and fit for the purpose.
- Works may now proceed with caution exercised when working close to the protective fencing barrier.

10.3 **Construction Phase –**

Specific Actions:

- Prior to commencement of work on site a check is to be made to verify that all of the protective fencing barriers are still where they should be by reference to the Tree Protection Plan and that they are in good order and fit for the purpose.
- Works may now proceed with caution exercised when working close to the protective fencing barrier.

Generic Actions:

- It is suggested that clear and concise points of contact and lines of communication are established prior to commencement of the works on site including:- Arboricultural Consultant; Local Authority Tree Officer; Local Authority Planning Officer; Site Manager and Foreman
- It is advised that the Site Manager establishes his own listing of contact details at the Pre-Start site meeting and pins this up in site office for all to refer to.
- Care must be taken when planning site operations to ensure that wide or tall loads, or plant with booms, jibs and counterweights can operate without coming into contact with retained trees.
- **ALL** machine operators should undergo an induction session prior to being allowed to work on site, where the Method Statement is explained to them and a copy pinned up in the site office for their reference.

- In addition a copy of the Tree Protection Plan will be provided and pinned up in the site hut and the trees which are to be retained and protected will be pointed out to the operator and they will also be shown which trees these are on site before they start work. In this way it is hoped that unnecessary damage, by root disturbance and collision of machinery booms and operating arms with tree crowns can be avoided.
- The exact route of underground service connections is not confirmed but it is intended that they would link in with the existing service runs to the house. This matter is probably best dealt with to satisfy a Condition of Planning Approval and it can be worded to allow for the need for a further Method Statement and Protection Plan **if required** prior to undertaking any excavations for the implementation of service runs.
- In the interim details of NJUG 10 Guidelines are included (**at appendix BH6**) as a basic Method Statement and as the basis for further detailed discussion in the unlikely event that it should prove necessary to run service routes through RPA's.

11.0 SOFT LANDSCAPING WORKS

- Any soft landscape works within the protected areas shall be in accord with Table 3 and Sections 13 & 14 of BS5837:2005 (**see copy extracts at appendix BH6**).
- The plans and specifications for the landscaping of this development should ideally be drawn up by a qualified Landscape Architect.
- On completion of all building works and immediately prior to landscaping works being undertaken and with the agreement of the LPA Tree Officer the Protective Fencing may be removed and the area within opened up for soft landscaping and final surface treatments.
- At this juncture appropriate decompaction, aeration and mulching should be undertaken on any areas designated for planting, which for practical operational reasons could not be fully protected during the build process.
- This is to be hand excavation works only with no machinery being used unless specific ground protection has been laid. Even then only lightweight mini excavators are to be permitted access.
- It is acknowledged that by the nature of the works some surface excavation is needed to prepare for tree and shrub planting or laying of lawns. This work shall be undertaken with hand forks and any exposed roots are to be cleanly severed to encourage new growth and an adequate soil medium laid around them to encourage same.

12.0 MONITORING & SITE SUPERVISION

- It is recommended in BS5837:2005 that either an arboriculturist or a person suitably experienced in the subject is retained to advise on all tree related aspects of site monitoring and supervision and it is the local authority's responsibility to make this a condition of planning approval with the said Condition ideally requiring a set schedule of operations and timings prior to undertaking works on site.
- In this instance it is probably necessary to conduct a pre-start meeting to verify the position and effectiveness of the erected protective fencing and then two follow up inspections – one mid way through the contract and then another at the end to verify satisfactory completion or address any outstanding issues which may require attention.

13.0 CONCLUSIONS

- Provided that the methodology prescribed in this AMS & TPP report is strictly adhered to I would expect the retained trees to survive the development and to continue to grow on safely and healthily in the future.
- A number of trees and groups will require removal but they are all of low grading and poor quality and add little in terms of amenity value to the site.
- Some quality and selective tree planting can be undertaken to be in harmony with the new use for the site and this will in my opinion adequately offset the loss of the low graded trees and groups.
- This is therefore in my opinion a fully supportable scheme in arboricultural terms.