PLANNING APPLICATION FOR CONSTRUCTION OF A NEW GARDEN ROOM AND ASSOCIATED HARD LANDSCAPING

ARBORICULTURAL SURVEY, IMPACT ASSESSMENT AND PROTECTION PLAN

BEDFORD HOTEL, SOUTHAMPTON ROW, LONDON

ON BEHALF OF IPA ARCHITECTS

BS5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION AND CONSTRUCTION – RECOMMENDATIONS'

Prepared by: M REID MICFor MArborA

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PLANNING | DESIGN | ENVIRONMENT | ECONOMICS

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REVISIONS:

Date	Rev	Description	Initials
29.02.2016	-	First issue	MR

1. INTRODUCTION

1.1 Pegasus Group have been instructed by IPA Architects (on behalf of their clients The Imperial London Hotels Ltd) to assess the impact of development proposals on the existing arboricultural resource at the rear of Bedford Hotel, 83-85 Southampton Row, London; hereafter referred to as 'the site'.

1.2 Site location:

- Postcode: WC1B 4HD

APPENDIX 1 – SITE LOCATION PLAN

1.3 Development proposals consist of:

- Addition of new features to an existing hard landscaped area to the rear of the hotel
- Demolition of existing laundry room and construction of a new garden room.

1.4 The proposals have been identified as having potential to impact on trees within the site and Pegasus Group have therefore been instructed to assess the arboricultural impacts of the proposals in accordance with BS 5837:2012 'Trees in Relation to Design, Development and Construction'. This shall include:

- Tree survey information
- Arboricultural Impact Assessment (AIA)
- Tree Protection Plan (TPP).

1.5 No response has been received in response to a request made to the local Planning Authority (LPA) to confirm whether or not Tree Preservation Orders (TPO) apply to any of the trees on site. However, it is understood that the site is located within a Conservation Area.

1.6 All trees on the site with a trunk diameter greater than 75mm at 1.5m height are subject to statutory protection. Excluding specific exemptions (including the grant of full planning permission) all tree works must be notified to the LPA in the form of a six-week Section 211 notification.

2. REPORT LIMITATIONS

2.1 Trees are living organisms as well as self-supporting dynamic structures. Their physiological and structural condition can change rapidly in response to a wide range of biotic/abiotic factors. They have the potential to fail structurally, without prior manifestation of any reasonably observable symptoms. It is therefore not possible to categorically state that any tree is 'safe'.

2.2 This report is prepared for planning application purposes only and does not evaluate the degree of risk posed by trees.

2.3 It is beyond the scope of this report to comment in relation to structural damage – direct or indirect, existing or potential – that might be associated with vegetation growth, or vegetation-related soil subsidence or heave.

2.4 Any management recommendations set out within this report are of an advisory and preliminary nature only and relate to trees within the context of current site use. Any physical alterations to site conditions subsequent to the date of the site survey will have the potential to change/invalidate the findings and recommendations of this report.

2.5 The findings and recommendations of this report are limited to a period of 24 months from the date of this report.

3. DOCUMENTS AND INFORMATION PROVIDED

3.1 For the purposes of carrying out the assessment, Pegasus Group were provided with the following information:

- IPA Architects drawing 'Existing site plan' Ref 12C7/EX/100 Dated 10.04.15
- IPA Architects drawing 'Proposed site plan' Ref 12C7/LO/200 Dated 12.01.16

5. DESCRIPTION OF THE SITE AND TREES

5.1 The land to the rear of the hotel consists of a hard-landscaped seating areas that features a curved linear water feature and a number of well-established laurel trees growing in raised planters.

5.2 There is an offsite horse chestnut tree approximately 2m beyond the western site boundary wall. There is also a larger tree group containing some well-established Indian bean trees (*Catalpa bignoniodes)* and sycamore *(Acer pseudoplatanus)* situated on land adjacent to the south of the site.

5.3 The land to the rear of the hotel is screened from public views by buildings located on adjacent streets or by mature trees that are located in the rear gardens of nearby property.

5.4 On this basis it is considered that none of the trees on or adjacent to the site make a significant contribution to public visual amenities of the locality.

5.5 At the southern end of the site interior there is a brick laundry room. Between the rear wall of this structure and the boundary wall of the site there are two early mature sycamore trees. These trees are the main subject of this report.

6. TREE SURVEY

6.1 Pegasus Group visited the site on 12th January 2016. Individual present on site: Matthew Reid MICFor MArbor A.

6.2 The tree survey was carried out with reference to methodology set out in BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.

6.3 Tree survey findings are recorded in the tree survey schedule.

APPENDIX 2 – TREE SURVEY SCHEDULE

6.4 Within the tree survey schedule, each surveyed tree (T) and group (G) on or adjacent to the site is given a reference number which refers to its position on the tree survey plan. Also shown on the tree survey plan are quality grading and, for indicative purposes, Root Protection Areas (RPA). RPAs are defined at Section 5.

APPENDIX 3 – TREE SURVEY PLAN

6.5 In accordance with BS5837:2012, the following measurement standards apply to the tree survey information.

- **Tree species** are listed by common name.
- **Heights** are measured in metres. They are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- **Trunk diameters** are measured in millimetres and are rounded to the nearest 10mm. Single stemmed tree diameters are measured at 1.5m above ground level or, where a fork or swelling makes this impractical, at the narrowest point beneath. Diameters of multi-stemmed trees are calculated as 'combined stem diameters' according to specific guidance set out within BS5837:2012. Where trunk diameters have had to be estimated due to poor access, for example, this is indicated with a '#'.
- **Branch spreads** are taken at the four cardinal points to derive an accurate representation of the tree crown. They are recorded up to the nearest half metre for dimensions up to 10m and to up the nearest whole metre for dimensions over 10m.
- **Crown clearance** is expressed both as existing height above ground level of first significant branch along with its direction of growth (eg 2.5m-N), and also in terms of the overall canopy. Measurements are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- **Estimates**. Where any other measurement has had to be estimated, due to inaccessibility for example, this is indicated by a "#" suffix to the measurement as shown in the tree survey schedule.

- **Life stage** is defined as Y – young (stake dependent), SM - Semi-Mature (still capable of being transplanted without preparation, up to 30cm girth and not yet sexually mature), EM – Early Mature (not yet having reached 75% of expected mature size), M – Mature (anything else up to normal life expectancy for the species), OM – Over Mature (anything beyond mature and in natural decline), V – Veteran (any tree displaying characteristics described by Natural England).
- **General observations** are recorded in relation to a tree's structural and/or physiological condition (eg the presence of any decay and physical defect) and /or any preliminary management recommendations that may be appropriate.
- **Physiological condition** is described as Good (no indications of impaired physiological function and in optimum condition for age and species), Fair (with indicators of reduced vitality. Some intervention may be required), Poor (with significantly impaired physiological function for age and species).
- **Structural condition** is described as Good (without any observable significant bio-mechanical structural weaknesses), Fair (with minor biomechanical structural flaws. Some remedial action may be required), Poor (with significant biomechanical weaknesses requiring intervention particularly where risk management is required).
- **Useful life expectancy**, or the length of time a tree's is estimated to be able to make a useful contribution, is expressed in years as: <10, 10+, 20+, 40+.
- **Quality** of individual trees, groups of trees and woodlands is assessed in terms of quality and benefit within the context of proposed development and graded into one of four categories (A, B, C and U) which are differentiated on the tree survey (Appendix 3) plan by the colours indicated below:
    - Category A (Green) Trees of high quality with an estimated remaining life expectancy of 40 years
    - Category B (Blue) Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
    - Category C (Grey) Trees of low quality with an estimated remaining life expectancy of at least 10 years.
    - Category U (Red) Unsuitable for retention. Trees in such a poor condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
- A, B and C trees have also been given a sub-category of 1, 2 or 3 which reflects their arboricultural, landscape or cultural and conservation values respectively. Each subcategory has an equal weight, for example an A1 tree has the same retention priority as an A3 tree.
- In addition to the category, the tree survey schedule also describes each tree's root protection area (RPA) in terms of radius (metres) and overall area (sq metres).

6.7 Photographs of the site for illustrative purposes are shown below:

Photoview 1: view south showing the laundry room with T1 & T2, sycamores, in centre frame. Offsite tree group G8 (ivy on main stems) is visible beyond. T3, laurel, is in right of frame

Photoview 2: illustrating proximity of T1 (left of frame) and T2 to laundry room wall (left of frame) and boundary wall

Photoview 3: view northeast showing character of the site. Note trees growing in raised planter beds.

6.8 Analysis of the tree survey schedule is set out in the following table:

	A	B	C	U	Total
Groups	0	1	0	0	**1**
Trees	0	4	3	0	**7**
Total	**0**	**5**	**3**	**0**	**8**

6.9 With reference to the above table, eight items were surveyed comprising seven trees and one group:

- The majority of survey items, five, were considered to be of moderate quality (Category B) with an anticipated useful life expectancy of in the region of 20+ years.
- A further three survey items were considered to be of low quality (Category C) with an anticipated useful life expectancy of in the region of 10+ years.
- No items were deemed to be of high quality (Category A) with an anticipated useful life expectancy of 40+ years.
- No items were deemed to be poor quality (Category U) with an anticipated remaining life expectancy of less than 10 years.

7. IDENTIFICATION OF PRELIMINARY TREE CONSTRAINTS

7.1 In accordance with BS5837:2012, below ground constraints, or root protection areas (RPAs), for the surveyed trees have been plotted onto the tree survey plan for the site. These are represented as a circle centred on the base of each tree stem with a radius of 12 times stem diameter measured at 1.5m above ground level.

7.2 With reference to BS5837:2012, a root protection area (RPA) is defined 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 should be treated as a priority". "The default position [when considering design layout in relation to RPAs] should be that structures are located outside the RPAs of trees to be retained".**

7.3 BS5837:2012 states (4.6.2) that,

> **"where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced."**

The BS goes on to state that,

> **"modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution,"**

and that any deviation from the original circular plot should take into account:

- morphology and disposition of roots
- topography and drainage
- soil type and structure
- the likely tolerance of the tree to root damage/disturbance

7.4 Root systems can be damaged in a number of ways as follows:

- Severance of a root will destroy all parts of the root beyond that point. The larger the root severed, the greater the impact on the tree. If roots are damaged close to the trunk, the anchorage and stability of the tree can be affected.
- The root bark protects the root from decay and is also essential for further root growth. If damage to the bark extends around the whole circumference, the root beyond that point will be killed.
- Soil compaction, which may occur from storage of material or passage of heavy equipment over the root area, can restrict and even prevent gaseous diffusion through the soil, and thereby asphyxiate the roots. The roots must have oxygen for survival, growth and effective functioning.
- Lowering the soil level will strip out the mass of roots near the surface.

- Raising soil levels will have the same effect as soil compaction.
- Incorrect selection and application of herbicide.
- Spillage of oils or other harmful materials.

8. ARBORICULTURAL IMPACT ASSESSMENT (AIA)

8.1 With reference to BS5837:2012 *'Trees in relation to design, demolition and construction'*, this AIA evaluates the direct and indirect effects of the proposals on the site's arboricultural resource.

8.2 The AIA considers the effects of any tree loss required to implement the illustrative design as well as any potentially damaging activities proposed in the vicinity of retained trees.

8.3 With reference to BS5837:2012, the AIA includes a tree retention/removal plan. This illustrates the anticipated extent of tree removals that will be required in order to enable the construction of the outline development proposals. It is incorporated onto the Tree Protection Plan (Section 7) for clarity in this instance.

8.1 An AIA schedule is attached that relates to the trees that are located within potentially within influencing distance of the outline proposals.

APPENDIX 4 – ARBORICULTURAL IMPACT ASSESSMENT SCHEDULE

8.2 The AIA schedule is an interpretation by an arboriculturist of the proposals in relation to the existing arboricultural constraints on site. The schedule provides a tree-by-tree/group-by-group assessment of the level of potential impacts of the proposals. This assessment is cross referenced against tree/group qualities in order to provide consistent evaluations of the degree of significance of the anticipated arboricultural impacts.

8.3 The AIA schedule subsequently sets out any preventative measures and other mitigation proposals to reduce, insofar as possible, the level of arboricultural impact and its corresponding significance. This 'adjusted' significance – which is an approximation - may be considered either in terms of an individual survey item, for example in the context of the use of tree protection barriers, or (where mitigation planting is concerned) in the wider context of the site's overall arboricultural resource.

8.4 Analysis of the AIA schedule relating to the development area is set out in table form below:

		A	B	C	U	Grand Total
Group	Retain	0	1	0	0	**1**
Trees	Remove	0	0	2	0	**2**
	Retain	0	4	1	0	**5**
Grand Total		**0**	**5**	**3**	**0**	**8**

8.5 With reference to 6.4 it can be seen that out of an overall total of eight survey items (including those that are offsite):

- One group (Category B) will be retained
- Five trees (4 Category B, one Category C) will be retained
- Two trees (two Category C) will be removed.

8.6 The two sycamore trees to the rear of the existing laundry room that must be removed:

- Are both likely to become implicated in direct damage to structures in the medium and longer terms
- Are not considered to make a positive contribution to the character of the conservation area
- Cannot be viewed from a public location.

8.7 Neither tree's contribution to public visual amenities is considered sufficient to merit statutory protection in the form of a TPO. As such, the sycamore trees should not form a material constraint to development.

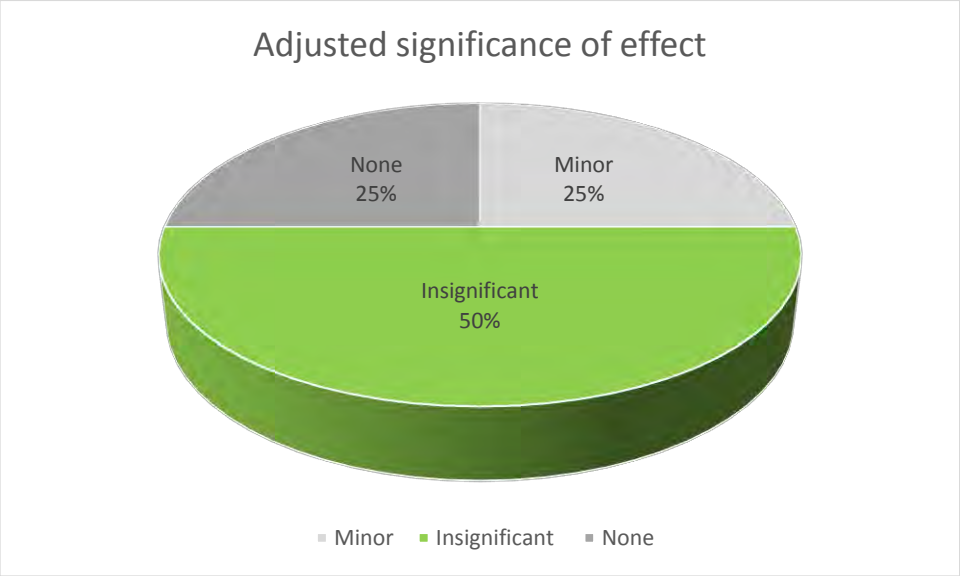
8.8 The removal of trees from the site does, however, have the potential to result in a net loss to the wider urban forest. On this basis, it is strongly recommended that two new trees *Alnus glutinosa* 'Imperialis' should be planted as green infrastructure mitigation in the north-eastern corner of the site. These trees have attractive 'cut' foliage, reasonable autumn colour and their thinner than average foliage density shall create desirable dappled shade within the proposed seating area at this location.

8.9 Replacement of the sycamore trees with considered new planting is therefore considered to provide the more sustainable arboricultural solution for the site than the circumstances that presently exist.

Assessment of arboricultural impacts in the context of anticipated new Green Infrastructure planting

8.10 With reference to the AIA schedule, the overall estimated adjusted significance (ie in the context of anticipated new tree planting) of the proposals is summarised in table and graphical form below:

Adjusted significance of effect	Total
Minor	2
Insignificant	4
None	2
Grand Total	**8**



8.11 With reference to the above table and definitions of significance of effect which are set out alongside the AIA Schedule, it can be seen that the greater majority of arboricultural impacts of the proposed development are considered to be:

- 25% 'minor' (no obvious impact on public visual amenity)
- 50% 'insignificant' (minimal damage in very small amounts).
- 25% 'none'

8.12 The findings of the arboricultural impact assessment demonstrate that after tree protection measures and new tree planting is taken into consideration there will be limited minor arboricultural impacts as a result of the development.

8.13 It is not considered that the removal of the sycamore trees will have an adverse effect on the public visual amenities of the area and

8.14 Overall, it is therefore reasonable to conclude that when considered 'in the round' the proposals are acceptable from an arboricultural perspective for the following key reasons:

- The majority of site's arboricultural resource can be retained.
- Trees that are unsustainable and have not public visual amenity value shall be removed
- New tree planting is likely to function over time to provide sustainable new green infrastructure.

9. TREE PROTECTION PLAN (TPP)

9.1 A Tree Protection Plan is attached.

APPENDIX 6 –TREE PROTECTION PLAN

9.2 In accordance with BS5837:2012 the TPP is superimposed onto the proposed site layout plan and based on the topographical survey.

9.3 Due to hard surfacing throughout the site. Tree protection barriers are only required in relation to preventing above ground, contact-type damage with the retained trees.

9.4 The tree protection measures shown on the Tree Protection Plan demonstrate the feasibility of the proposed development in relation to retained trees. However, they must be implemented with specific reference to a finalised tree protection plan and an arboricultural method statement that is relevant to the proposals.

10. HEADS OF TERMS FOR AN ARBORICULTURAL METHOD STATEMENT

10.1 BS5837:2012 (Figure 1) recommends that detailed/technical design of tree protection and arboricultural methodologies should be resolved and finalised following on from the approval of the feasibility of a scheme by the relevant regulatory body.

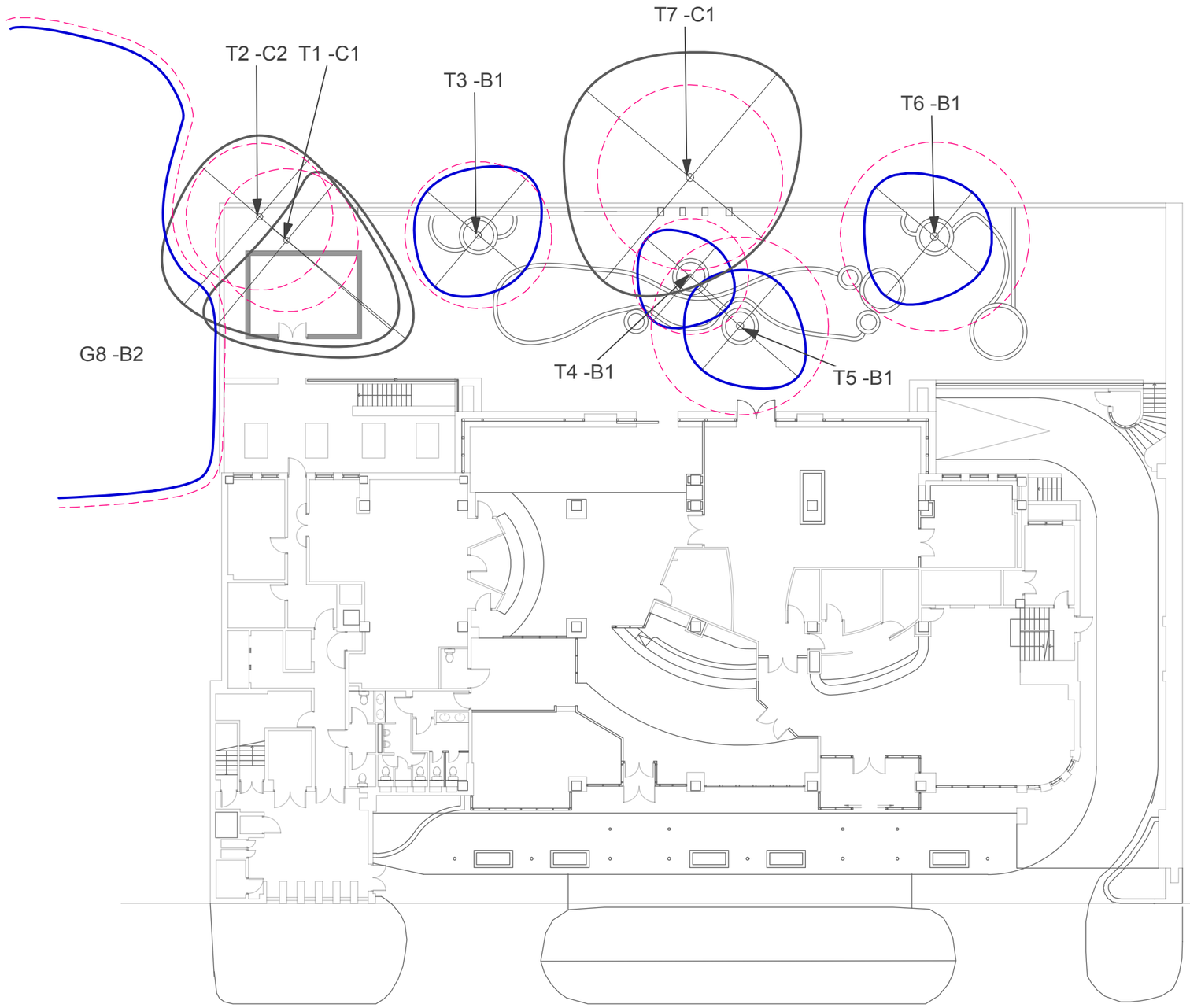
10.2 Annex B and Table B.1 of BS5837:2012, an informative, advises that arboricultural method statement heads of terms are a sufficient level of information in order to deliver tree-related information into the planning system. The table also advises that a detailed arboricultural method statement might reasonably be required as a 'reserved matter' or planning condition.

10.3 In relation to the above site, it is anticipated that arboricultural working methods are likely to be quite straightforward. A draft, 'heads of terms' is set out below:

- Tree removals and facilitation pruning
- Erection of tree protection barriers
- Main construction phase
- Removal of tree protection barriers
- Final landscaping including tree planting.

APPENDIX 1

SITE LOCATION PLAN



KEY

BS 5837 : 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
- Tree Category B - Moderate Quality
- B Category - Hedgerow, Group, Woodland
- Tree Category C - Low Quality
- C Category - Hedgerow, Group, Woodland
- Tree Category U - Unsuitable for Retention
- Root Protection Area to BS 5837:2012
- Shrub Mass / Offsite Tree

Note: tree positions are approximated based on site plan information and observations on site.

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

Revisions:
First Issue- 13/01/2016 DB

Tree Survey

The Bedford Hotel, 88-98 Southampton Row

Client: IPA Architects
DRWG No: **I.0157_01** Sheet No:- REV: -
Drawn by : DB Approved by: MR
Date: 13/01/2016
Scale: 1:250 @ A3

Pegasus Environment

0 10m

APPENDIX 2

TREE SURVEY SCHEDULE

Date: 12.01.16 Site: Bedford Hotel, Southampton Row Surveyor:MR Client: IPA Architects Job no: I.0157

Number	Species	Height	Estimate	Stem dia	Estimate	Spread								Crown clearance height					Life stage	General observations	Structural condition	Physiological condition	ULE	Quality grading	RPA radius	RPA area
						N	Estimate	S	Estimate	E	Estimate	W	Estimate	1st branch	Estimate	1st branch direction	Canopy	Estimate								
T1	Sycamore	15	-	310	-	8	-	1	#	6.0	#	4	#	2.5	#	N	2.5	#	EM	• Dead ivy extending up stem • Magpie nest in crown • One-sided crown leaning north • 1m from boundary wall and 0.5m from laundry wall	Fair	Good	10+	C1	3.7	43
T2	Sycamore	15	-	320	-	9	-	4	#	6.0	#	4	#	2.5	#	SW	3	#	EM	• Dense ivy in crown • Magpie nest in crown • 0.25m from boundary wall • 1.5m from laundry wall	Fair	Good	10+	C2	3.8	46
T3	Laurel	7	-	320	-	3	-	3.5	-	3.5	-	4	-	Information not required			2.5	#	M	• Growing in raised planter	Good	Good	20+	B1	3.8	46
T4	Laurel	8	-	250	-	2.5	-	3	-	3.0	#	2	#	Information not required			2.5	#	M	• Growing in raised planter	Good	Good	20+	B1	3.0	28
T5	Laurel	7	-	380	-	4	-	3	-	3.0	#	3	#	Information not required			2.5	#	M	• Growing in raised planter	Good	Good	20+	B1	4.6	65
T6	Laurel	6	-	410	-	3	-	4	-	4.0	-	3	-	Information not required			2.5	#	M	• Growing in raised planter	Good	Good	20+	B1	4.9	76
T7	Chestnut (Horse)	14	#	400	#	5	#	7	#	7.0	#	7	#	Information not required			3		M	• Offsite tree	Fair	Good	10+	C1	4.8	72
G8	Indian bean tree, sycamore	16	#	380	#	Information not required													M	• Offsite tree group with collective value as an amenity	Fair	Good	20+	B2	4.6	65

APPENDIX 3

TREE SURVEY PLAN

APPENDIX 4

ARBORICULTURAL IMPACT ASSESSMENT SCHEDULE

		Arboricultural Impact Assessment Significance Matrix					
		Level of Impact					
		High	**Medium**	**Low**	**Slight**	**None**	
		e.g. removal required to facilitate development. Excessive root severance. Excessive above ground pruning. Hedgerows: >50% loss of overall length.	e.g root damage, soil compaction or above ground impacts tree management works unacceptable in terms of BS3998:2010. Hedgerows: >25% loss of overall length.	e.g. minor fine root loss, installation of no dig surfacing, temporary ground protection. Moderate tree works within the parameters of BS3998:2010. Hedgerows: 5-10% loss of overall length.	e.g.very minor works within root protection areas for example the installation of lightweight fencing or soft landscaping. Hedgerows: <5% loss of overall length.	E.g. trees located at a significant distance from development and construction activities.	
BS5837:2012 Quality Assessment Category	**A**	Major	Major	Moderate	Minor	None	**Significance of effect**
	B	Major	Moderate	Minor	Insignificant	None	
	C	Moderate	Minor	Insignificant	Insignificant	None	
	U	Minor	Minor	Insignificant	Insignificant	None	
		Significance of effect					

Significance of effect - definitions	
Major	Removal/acute damage to structural integrity/vitality/appearance of a high quality arboricultural feature. Depending on circumstances, may result in the loss of all/greater majority of public visual amenity value. Mitigation planting unlikely to be effective except in the long term (40+ years).
Moderate	In the case of damage: unlikely to give rise to tree death but likely to noticably reduce vitality and deterioration of appearance in the short and medium term, with corresponding reduction in public visual amenity value where relevant. Tree removals that can be effectively mitigated in the medium term (20-40 years). For example notable crown dieback, foliage discolouration, low leaf density, or tree management works unacceptable in terms of BS3998:2010.
Minor	Short-term damage with limited distribution that can be reasonably compensated for by new growth. Unlikely to result in observable symptoms of damage in relation to structural integrity/vitality/appearance. No obvious impact on public visual amenity. Tree removals that can be mitigated in the short-term (10-20 years)
Insignificant	Minimal damage in very small amounts. No obvious impact on public visual amenity.
None	No impact to above or below ground components of tree reasonably anticipated.

Arboricultural Impact Schedule **Site; Bedford Hotel** **Ref: I.0157**

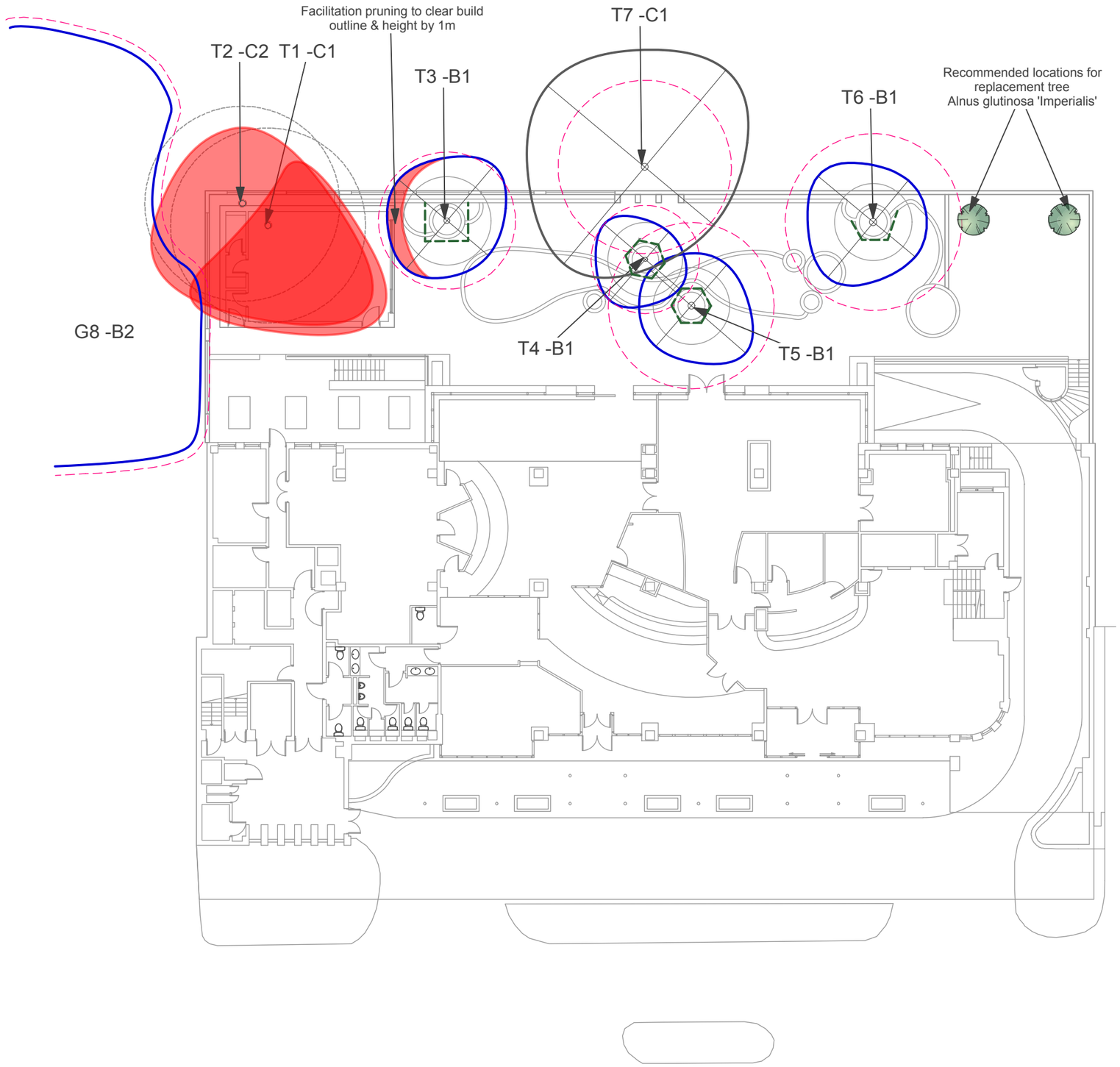
No	Species	Quality	Arboricultural effects (direct and indirect) of proposed design - description	Unadjusted scale of effect	Unadjusted significance of effect (scale effects x quality)	Recommended mitigation	Adjusted scale of effect following mitigation	Adjusted significance of effect (adj .scale effects x quality)	Tree removal required
T1	Sycamore	C1	• Remove to enable development	High	Moderate	• Replant with *Alnus glutinosa* 'Imperialis' at NE corner of site	Medium	Minor	Remove
T2	Sycamore	C2	• Remove to enable development	High	Moderate	• Replant with *Alnus glutinosa* 'Imperialis' at NE corner of site	Medium	Minor	Remove
T3	Laurel	B1	• Minor facilitation pruning to SE canopy to accommodate new garden room • Potential for impact damage to trunk and lower branches due to construction activities • Minimal potential for root disturbance due to protection by raised planters and surrounding hard surfacing	Low	Minor	• Use of tree protection barriers as shown on the tree protection plan to prevent impact damage • Barriers installed prior to commencement of works and retained in place until completion	Slight	Insignificant	Retain
T4	Laurel	B1	• Minor facilitation pruning to SE canopy to accommodate new garden room • Potential for impact damage to trunk and lower branches due to construction activities • Minimal potential for root disturbance due to protection by raised planters and surrounding hard surfacing	Low	Minor	• Use of tree protection barriers as shown on the tree protection plan to prevent impact damage • Barriers installed prior to commencement of works and retained in place until completion	Slight	Insignificant	Retain
T5	Laurel	B1	• Minor facilitation pruning to SE canopy to accommodate new garden room • Potential for impact damage to trunk and lower branches due to construction activities • Minimal potential for root disturbance due to protection by raised planters and surrounding hard surfacing	Low	Minor	• Use of tree protection barriers as shown on the tree protection plan to prevent impact damage • Barriers installed prior to commencement of works and retained in place until completion	Slight	Insignificant	Retain

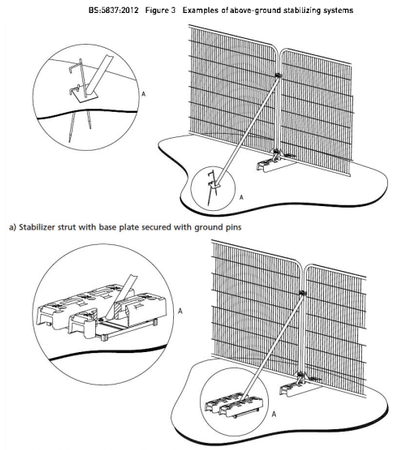
Arboricultural Impact Schedule | Site; Bedford Hotel | Ref: I.0157

No	Species	Quality	Arboricultural effects (direct and indirect) of proposed design - description	Unadjusted scale of effect	Unadjusted significance of effect (scale effects x quality)	Recommended mitigation	Adjusted scale of effect following mitigation	Adjusted significance of effect (adj .scale effects x quality)	Tree removal required
T6	Laurel	B1	• Minor facilitation pruning to SE canopy to accommodate new garden room • Potential for impact damage to trunk and lower branches due to construction activities • Minimal potential for root disturbance due to protection by raised planters and surrounding hard surfacing	Low	Minor	• Use of tree protection barriers as shown on the tree protection plan to prevent impact damage • Barriers installed prior to commencement of works and retained in place until completion	Slight	Insignificant	Retain
T7	Chestnut (Horse)	C1	• None	None	None	• None	None	None	Retain
G8	Indian bean tree, sycamore	B2	• None	None	None	• None	None	None	Retain

APPENDIX 5

TREE PROTECTION PLAN





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- Tree Category C - Low Quality
- C Category - Hedgerow, Group, Woodland
- Tree Category U - Unsuitable for Retention
- Root Protection Area to BS 5837:2012
- Shrub Mass / Offsite Tree
- Tree / Hedgerow to be Removed
- Tree Protection Barrier to BS 5837:2012

Note: tree positions are approximated based on site plan information and observations on site.

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

Revisions:
First Issue- 29/02/2016 AD

Tree Retention / Removal & Protection

The Bedford Hotel, 88-98 Southampton Row

Client: IPA Architects
DRWG No: **I.0157_02** Sheet No:- REV: -
Drawn by : AD Approved by: MR
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Pegasus Environment

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