

Land adjacent to Wrexham Maelor Hospital

Arboricultural Implication Study

May 2012

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May 2012

Report Reference: 2593/DR.12

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1.0 INTRODUCTION

1.01 A. C. S. Consulting is instructed by BAM Construct UK Limited, to report on trees and the implications of development at land adjacent to Wrexham Maelor Hospital. The assessment and report was undertaken by Ian Murat, Registered Consultant of the Arboricultural Association.

1.02 In accordance with Guidance on information requirements and validation for planning applications, this report fulfils the recommended national list criteria for tree survey/arboricultural information. More specifically, it contains the following:

- *A full tree survey to the requirements of BS5837(2012) Trees in Relation to Construction – Recommendations,*
- *A plan showing tree survey information, retention categorisation and root protection areas,*
- *An assessment of the arboricultural implications of development detailing trees to be retained/removed and appropriate protection measures,*
- *An arboricultural method statement detailing the means of tree protection, implementation and phasing of works.*

1.03 The site was visited during March 2012. A survey of the trees was completed recording; *species type, age, height, crown spread, diameter-at-breast-height, and condition.*

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2.0 BACKGROUND

The Site

- 2.01** The site is identified by the council as part of the Western Gateway Development. The council produced a development brief in 2004. The site is part of Zone A.

Statutory Protection/Planning Policies

- 2.02** The application is subject to the Planning Policies of Wrexham Borough Council. A copy of the relevant planning policy is reproduced below.

Policy EC4 Development proposals should provide for the conservation and management of hedgerows, trees, orchards, woodland, wildlife and other natural landscape and water features, and include new planting in order to enhance the character of the landscape and townscape. Development which results in the loss or significant damage to valuable trees, important hedgerows or ancient woodland sites will not be permitted.

The council has in force a Local Planning Guidance Note 17 'Trees and Development' which amplifies the above cited policy. The site is identified as an employment site in the Unitary Development plan. The site is subject to a Tree Preservation Order. The Wrexham Maelor Borough Council Tree Preservation Order No.43, 1989 protects four trees at the site. Trees T17, T18, T19 and T20. An examination of the site can only identify a group of sycamores in a similar location of T17 and T18. These trees are located off site.

Topographical Survey

- 2.03** The arboricultural survey has been based on the supplied topographical survey. The survey noted the presence of offsite trees but has not specifically noted any individual trees. Where possible, the trees in this location have been surveyed. However, it has not been possible to plot the trees with any degree of accuracy.

3.0 TREE SURVEY

3.01 Five groups and twenty-nine trees as individuals were identified. The group classification is intended to identify trees that form cohesive arboricultural features either aerodynamically, visually or culturally.

3.02 The tree data can be found at Appendix 1. There is no requirement in BS 5837 to repeat the details of the Constraints information save for confirming that the trees were surveyed for *species type, age, height, crown spread, diameter-at-breast-height, condition*, and their suitability for retention from ground level. Heights were measured with a Nikon Forestry 550 Hypsometer and diameters were taken, where possible, with a diameter tape to give an average stem measurement. Canopy spreads have been measured at the cardinal points or where they significantly extend in other directions.

Each tree has been assessed using the BS 5837 2012 category ratings (see Appendix 1). Consideration has been given to any Supplementary Planning Documents. The data collection is compliant with the advice set out at Subsection 4.4.2.5 of BS 5837:2012.

4.0 DEVELOPMENT IMPLICATIONS

4.01 The site is an irregular shaped parcel of land. It is a brownfield site.

Development Implications

4.02 The project comprises an Ambulance and Fire Station of approximately 3400m² gross internal floor area, arranged over two storeys. The location is on land recently purchased from the council on the western side of Wrexham town centre, on a site bounded to the north by Wrexham Maelor Hospital (specifically the hospital car park on the former and disused railway), to the west by the proposed improved Croesnewydd Road, and to the south by the River Gwefro.

The Ambulance and Fire Station will house:

- 8 No. Fire Appliance Vehicles
- 6 No. Ambulance Vehicles in an internal garage
- Up to 3 No. Ambulance Vehicles in an internal cleaning and restocking bay
- Up to 5 No. Ambulance Vehicles in a vehicle maintenance garage

The accommodation for personnel will include:

- Rest room, dining and kitchen facilities
- Lockers, changing rooms and toilet facilities
- Training room facilities
- Support offices for operational functions
- Store rooms for equipment and supplies
- Administrative offices

Other significant features of the development of the site will include:

- A hardstanding 'apron' in front of the vehicle garages
- Car parking for 135 cars
- A vehicle washing and refuelling area
- A yard and compound for the ambulance vehicle maintenance operations

Various outbuildings, including oil stores, transformer and generator housings, covered parking for 12 ambulance vehicles, bin stores, cycle shelter etc

A Fire Training House, to simulate wet (water), cold smoke, and blackout rescue conditions (but not live fire or hot smoke conditions)

A compound to simulate rescue from Road Traffic Collision situations

The development is intended to achieve BREEAM 'Excellent', and incorporate low/zero carbon technologies.

Whilst it is acknowledged that all trees within the planning process are a material consideration, it is generally accepted that those trees rated as C or U are excluded from consideration regarding development implications, retained only where they pose no constraint on development.

Based on the proposals, a number of implications were noted. These have been summarised in the table below:

Impact	Reason	A	B	C
Trees lost for development	Construction	0	0	5537, 5538, 5539
Retained trees that may be affected by disturbance	Removal of existing earth mounds	0	0	5531, 5532
Trees to be pruned	Space for development/satisfactory relationship	0	0	0

Loss for Development

Overall, there are three direct losses to development. The trees are C category trees. The loss of C category trees should not influence the determination of the application.

Retained Trees that may be Affected by Disturbance

An analysis of the layout shows that there is the potential for disturbance to Tree 5531 and Group 5532 through the removal of the earth mound. However, the majority of the earth mound can be removed by large machinery with the mound adjacent to the Construction Exclusion Zone removed by smaller machinery under the guidance of the Arboricultural Consultant or the Ecological Clerk of Works.

Trees to be Pruned

None.

Policy

- 4.03** The over-arching policy guidance in respect of the site is that contained within Wrexham Maelor Borough Council's saved policy document. The application recognises that the retention of existing trees can add maturity to a new development and well-planned, designed and maintained new planting can greatly enhance its visual quality and character. The application accords with the council's policies through the detailed consideration of BS5837: 2012. Tree surveys, protection plans and arboricultural impact assessments are provided to be considered.

It has recognised that where trees have been felled, replacement planting has been stipulated as part of landscaping plans. The applicant has retained trees that give scale and maturity now or in the future. However, it is recognised that some trees will be felled but their loss has only a minimum impact on visual amenity.

Tree Protection

- 4.04** Plan 2593/TP/01 – Tree Protection Plan shows the location of fencing. There is a requirement for a nominal 10-metre ecological buffer between the river and the development. The Construction Exclusion Zone for trees falls within that buffer. Two trees located just outside the site will require specific tree protection measures. A method statement at Appendix 2 details the measures that will be taken to ensure Tree Protection and compliance with current best practice.

5.0 CONCLUSIONS

Summary

- 5.01** The application is a new-build of a fire and ambulance station with associated infrastructure to ensure its adequate serviceability. Trees losses are of mediocre specimens or trees that are considered to be exempt from planning control. The proposed development does retain trees in positions that are sustainable in the long-term.

Conclusions

- 5.02** The applicant submits an implication study that accords with Central Government advice and the requirements of the Council in respect of Best Practice. The proposal will result in the loss of trees. However, these losses are of Category C trees. The loss of C category trees should not influence the determination of the application. These losses are offset by the landscaping scheme. The scheme retains trees in sustainable locations. A method statement at Appendix 2 details working that allows their successful retention.

I Murat M.Sc., F.Arbor.A, CEnv, MIEEM
ACS Consulting
May 2012

Appendix 1

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Key

BS5837: 2012

Tree Tables

KEY

Age	Y – Young: Out-planted trees that have not yet established SM – Semi-mature: Established trees up to 1/3 of expected height and crown EM – Early mature: Between 1/3 and 2/3 of expected height and crown M – Mature: Between 2/3 and full expected height and crown FM – Fully mature: Full expected height and crown OM – Over mature: Crown beginning to break-up and decrease in size S – Senescent: Crown in advanced stage of break-up
Physiological Condition	Good – Very few defects a reasonable long life expectancy depending on age class Adequate – Some defects giving the tree a shortened life expectancy Poor – Limited life with major problems
Structural Condition	Good – Very few defects Adequate – Some defects rectifiable with minor tree surgery Poor – Significant defects only rectifiable with major tree surgery or felling

Table 1 – Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on Plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other U category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality. <i>NOTE Category U trees can have existing or potential conservation value which might be desirable to preserve; see 4.5.7</i>			RED
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation.	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dormant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	GREEN
Category B Tress of moderate quality with an estimated remaining life expectancy of at least 20 years.	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.	Trees with material conservation or other cultural value.	BLUE
Category C Tress of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value, and/or trees offering low or only temporary/transient landscape benefits.	Trees with no material conservation or other cultural benefits	GREY

Wrexham

Tree Ref No.	Species	Height M	Stem Diameter MM	Branch Spread M	Height of Crown Clearance M	Age Class	Physiological Condition	Structural Condition	Preliminary Management Recommendations/ Comments	Estimated Remaining Contribution Years	Category Grading
5531	Sycamore	10	400	N 4 E 4 S 4 W 4	2	EM	Good	Adequate	Multi-stemmed specimen located on bank. A tree of low quality and value	20	C1/2
5532	Mixed hardwoods	5	100 - 150	N 2 E 2 S 2 W 2	1	SM	Good	Adequate	Mixed group of tree, self-set – alder, hawthorn, ash , sycamore. A group of low quality and value	20	C1/2
5533	Sycamore	5	100	N 2 E 2 S 2 W 2	1	Y/SM	Good	Good	Self-set tree, of low quality and value.	40	C1/2
5534	Ash	12	350	N 3 E 3 S 3 W 3	1	SM/EM	Good	Adequate	Located in bank side, of low quality and value.	20	C1/2
5535	Alder	6	150	N 2 E 2 S 2 W 2	1	Y/SM	Good	Good	Self-set specimen, of low quality and value.	20	C1/2
5536	Ash	4	100	N 2 E 2 S 2 W 2	1	Y/SM	Adequate	Adequate	Self-set specimen, of low quality and value.	20	C1/2

Wrexham

Tree Ref No.	Species	Height M	Stem Diameter MM	Branch Spread M	Height of Crown Clearance M	Age Class	Physiological Condition	Structural Condition	Preliminary Management Recommendations/ Comments	Estimated Remaining Contribution Years	Category Grading
5537	Alder	3	100	N 2 E 2 S 0 W 2	1	Y/SM	Adequate	Adequate	Loss to development.	20	C1/2
5538	Alder	4	100	N 2 E 2 S 2 W 2	1	Y/SM	Adequate	Adequate	Loss to development.	20	C1/2
5539	Ash	10	150	N 3 E 3 S 3 W 3	1	SM	Good	Adequate	Group of self-set ash. Loss to development	20	C1/2
5540	Alder	10	100	N 2 E 2 S 2 W 2	2	Y/SM	Adequate	Poor	Maturing epicormic growth on decayed stump.	<10	R
5541	Hawthorn	5	200	N 2 E 2 S 2 W 2	1	EM	Adequate	Adequate	A tree of low quality and value.	20	C1/2
5542	Elder	5	M/S	N 2 E 2 S 2 W 2	1	EM	Adequate	Adequate	Hawthorn growing through elder. A tree of low quality and value.	20	C1/2

Wrexham

Tree Ref No.	Species	Height M	Stem Diameter MM	Branch Spread M	Height of Crown Clearance M	Age Class	Physiological Condition	Structural Condition	Preliminary Management Recommendations/ Comments	Estimated Remaining Contribution Years	Category Grading
5543	Alder	12	165	N 2 E 2 S 2 W 2	1	SM/EM	Good	Good	Three trees as one visual unit. A group of low quality and value.	20	C1/2
5544	Mixed Hardwoods	12	200	N 3 E 3 S 3 W 3	1	SM/EM	Good	Good	Group of alder, elder, sycamore, a number of dead trees. A group of low quality and value.	20	C1/2
5545	Mixed hardwoods	8	150	N 2 E 2 S 2 W 2	1	SM/EM	Adequate	Adequate	Group of alder, hawthorn sycamore. A group of low quality and value.	20	C1/2
5546	Hazel	7	M/S	N 3 E 3 S 3 W 3	0	SM/EM	Adequate	Adequate	A tree of low quality and value.	20	C1/2
5547	Sycamore	12	200	N 6 E 3 S 3 W 4	1	SM/EM	Good	Poor	Multi-stemmed, included stem unions, of low quality and value.	20	C1/2
5548	Sycamore	12	300	N 4 E 3 S 4 W 3	1	SM/EM	Good	Adequate	Multi-stemmed, included stem unions, of low quality and value.	20	C1/2

Wrexham

Tree Ref No.	Species	Height M	Stem Diameter MM	Branch Spread M	Height of Crown Clearance M	Age Class	Physiological Condition	Structural Condition	Preliminary Management Recommendations/ Comments	Estimated Remaining Contribution Years	Category Grading
5549	Alder	7	M/S	N 3 E 3 S 3 W 3	1	SM/EM	Adequate	Adequate	Located in bank. Low quality and value.	10 – 20	C1/2
5550	Hazel	5	M/S	N 3 E 3 S 3 W 3	1	SM/EM	Adequate	Adequate	Located in bank. A tree of low quality and value.	20	C1/2
5551	Ash	12	400	N 4 E 2 S 3 W 4	2	SM/EM	Adequate	Adequate	Located in bank, low quality and value.	20	C1/2
5552	Hazel	5	M/S	N 3 E 3 S 3 W 3	1	SM/EM	Good	Adequate	A tree of low quality and value.	20	C1/2
5553	Hawthorn	7	225	N 3 E 2 S 2 W 2	1	SM/EM	Good	Good	A tree of low quality and value.	20	C1/2
5554	Goat willow			N E S W					Collapsed.	-	R

Wrexham

Tree Ref No.	Species	Height M	Stem Diameter MM	Branch Spread M	Height of Crown Clearance M	Age Class	Physiological Condition	Structural Condition	Preliminary Management Recommendations/ Comments	Estimated Remaining Contribution Years	Category Grading
5555	Goat willow			N E S W					Collapsed.	-	R
5556	Goat willow			N E S W					Part collapsed	-	R
5557	Alder	10	400	N 5 E 2 S 3 W 3	2	SM/EM	Good	Poor	Located in bank, of low quality and value.	20	C1/2
5558	Walnut	12	310	N 3 E 3 S 3 W 3	1	EM	Good	Adequate/. Poor	A tree of low quality and value.	20	C1/2
5559	Elder	3	300	N 2 E 2 S 2 W 2	1	SM/EM	Adequate	Adequate	A tree of low quality and value.	20	C1/2
5560	Alder	14	M/S	N 4 E 4 S 4 W 4	2	SM/EM	Good	Adequate/ Poor	A tree of low quality and value.	20	C1/2

Wrexham

Tree Ref No.	Species	Height M	Stem Diameter MM	Branch Spread M	Height of Crown Clearance M	Age Class	Physiological Condition	Structural Condition	Preliminary Management Recommendations/ Comments	Estimated Remaining Contribution Years	Category Grading
5561	Willow	12	600	N 4 E 4 S 4 W 1	1	EM	Good	Adequate/ Poor	Multi-stemmed with included stem unions. Low quality and value.	10	C1/2
5562	Alder	15	300	N 6 E 4 S 4 W 4	2	EM	Good	Poor	Multi-stemmed, included stem unions. Of low quality and value.	20	C1/2
5563	Willow	9	M/S	N 5 E 5 S 5 W 5	1	SM/EM	Adequate	Poor	Part collapsed, conservation value.	<10	R
5564	Mixed hardwoods	<10	M/S	N 5 E 5 S 5 W 5	1	SM/EM	Adequate	Adequate/ poor	Mixed group alder, collapsed willow. Low quality and value.	10 – 20	C1/2

Appendix 2

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Method Statement

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Main Activity/Area of Work

The works will be within the site boundaries.

Drawing/Specification References

2593/TP/01.

Barriers/Fences/Warning Signs

Heras fencing supported by a braced metal frame. The fence panels shall butt together and be fixed by two clamps. Each panel will be supported by a 45° section of scaffold tube from the top of the fence panel. The base will be fixed to two sections of 1000 mm long scaffold tube driven at least 500 mm into the ground.

Site Office/Storage Compound

Site office and storage compound shall not be located within the Root Protection Area/Construction Exclusion Zone detailed on Plan 2593/TP/01.

A flow chart at page 4 details the sequence of events.

- 1) The principal contractor is required to liaise with A.C.S. Consulting (the Arboricultural Consultant) throughout the project which includes additional site visits. The critical operations requiring liaison are as follows:

- Start and conclusion of Tree Works
- Installation of fencing.
- Removal of earth mound - Trees 5531, 5532

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Tree Felling

- 2) Trees: 5537, 5538, 5539. The stumps are to be removed by grubbing out. The ecological value of the stumps has not been assessed.
- 3) Any brush clearing required within the Construction Exclusion Zone shall be accomplished with hand-operated equipment.

Tree Pruning

- 4) None

Tree Work General

- 5) All works to be undertaken by a suitably qualified contractor.

Removal of Earth Mound – Trees 5531, 5532

- 6) The Construction Exclusion Zone is to be marked out. The regarding of the ground is to be monitored by the arboricultural consultant or the ecological clerk of works. The machinery is to work from outside the Construction Exclusion Zone. The spoil removal will be monitored for root exposure with appropriate action to be taken if any id found before the required grade is attained.

General Precautions

- 7) Spoil from the foundation pits or other excavations shall not be placed within the Construction Exclusion Zone. Details of site storage of demolition and building materials are to be agreed with the A.C.S. Consulting.
- 8) No materials, equipment, spoil or washout water may be deposited, stored or parked within the Construction Exclusion Zone.

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- 9) Tree contractors and not construction personnel must perform additional tree pruning required for clearance during construction.
- 10) If injury should occur to any tree during construction the Consultant should evaluate it as soon as possible.

Services

- 11) All services shall be installed in accordance with NJUG 10. Exposed roots shall be covered in Hessian sacking and kept moist throughout the construction operations until they can be covered in high-grade topsoil.
- 12) Any roots damaged during grading or construction shall be exposed to sound tissue and cut cleanly with a saw.
- 13) The Contractor shall report to A.C.S. that the works have been completed satisfactory. A.C.S. will be given the opportunity to inspect the works.

The contact details of A.C.S. Consulting are:

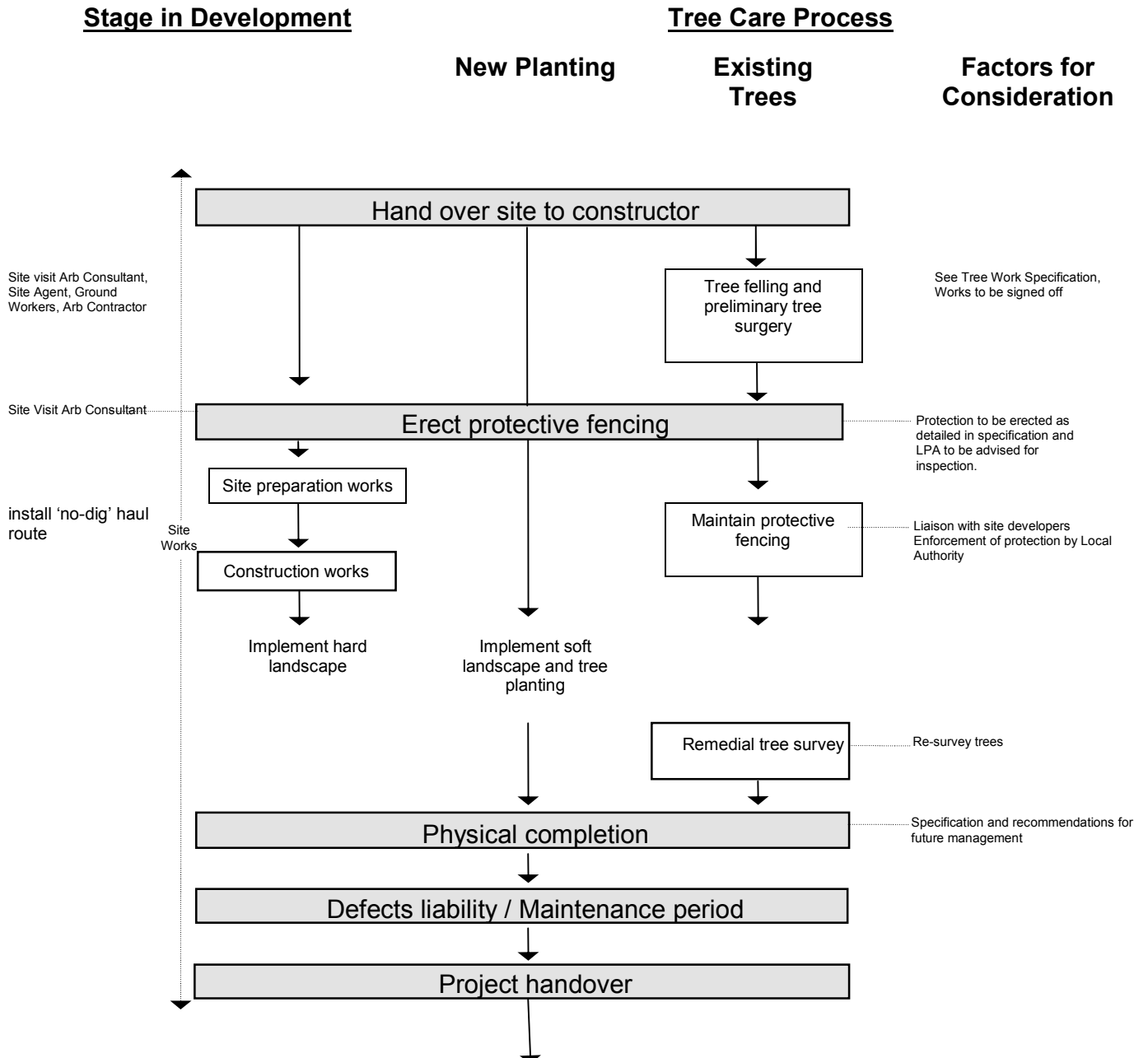
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A.C.S. are acting as Agent to BAM and as such cannot instruct Sub-Contractors to undertake additional work or delete work from the Contract between the Client/Principal Contractor.

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Protection of Trees on Development Sites



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