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Catalyst Bicester

Preliminary Arboricultural Impact Assessment

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Section 1: Introduction

Purpose

1.1. This Preliminary Arboricultural Impact Assessment (AIA) report has been prepared by Tyler Grange LLP (TG) on behalf of Albion Land (2013) Ltd to accompany a hybrid and outline planning application for the development proposals at Catalyst Bicester (hereby referred to as the 'site').

1.2. This report supports the following applications which have been submitted to Cherwell District Council (CDC):

- Application A – Hybrid planning application for outline planning permission for employment floorspace and full planning permission for a health and racquet club.
- Application B – Outline planning application for B1 floorspace (access to be considered).

1.3. The purpose of this report is to detail the findings of a tree survey of the site and to address the potential arboricultural impacts of the proposed scheme parameters for both applications A and B.

1.4. This report has been guided by the recommendations set out within the British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' (hereafter BS5837).

Site Context

1.5. The application site boundaries are demarcated by the red and blue lines as shown on the **Tree Constraints Plan (11920/P01a) (TCP)** located to the rear of this report. It is centred on National Grid Reference SP 57530 21032.

1.6. The site adjoins the south-western edge of Bicester. It is located to the east of Wendlebury Road, and the eastern end of Vendee Drive. Bicester Avenue Retail Park is to the north; a water course and open space to the east and agricultural land with a farm to the south. Vehicular access is from Wendlebury Road.

Section 2: Arboricultural Planning Context

Arboricultural Planning Policy Context

2.1. Under the Town and Country Planning Act 1990 (as amended) the requirement to consider trees as part of development is a material planning consideration and will be taken into account in the determination of planning applications. Arboricultural planning policy that relates to the site is set out by policy at a National and Local level.

National Planning Policy

2.2. The National Planning Policy Framework (NPPF) is a material consideration in planning decisions and outlines the Government's planning policies for England, setting out how these are expected to be applied. The consideration for existing trees and woodlands in the context of planning and new development is set out within Section 15 'Conservation and Enhancing the Natural Environment'.

2.3. Paragraph 170 provides a series of prerequisites to inform how planning policies and decisions should contribute to and enhance the natural and local environment. This includes "*protecting and enhancing valued landscapes*" and "*recognising the intrinsic character and beauty of the countryside".* The value of ecosystem services is also noted, including the "*economic and other benefits of the best and most versatile agricultural land, and of trees and woodland*".

2.4. Paragraph 170 also recognises the consideration for "*minimising impacts on and providing net gains for biodiversity"*. This includes the need to establish cohesive ecological networks that are "*more resilient to current and future pressures*".

2.5. Paragraph 171 addresses the need to take a "*strategic approach to maintaining and enhancing networks of habitats and green infrastructure*" adding that plans should be made for the "*enhancement of natural capital at the catchment or landscape scale across local authority boundaries*".

2.6. Paragraph 174 includes ways in which biodiversity should be protected and enhanced, such as plans that "*identify, map and safeguard components of local wildlife-rich habitats',* as well as "*wildlife corridors and stepping stones that connect them*".

2.7. Paragraph 175 highlights a series of principles that local planning authorities should apply when determining planning applications, stating that "*if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused*".

2.8. Paragraph 175 also adds that "*development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensatory strategy exists*".

2.9. At a national level, the consideration for trees is recognised in the context of their contribution green infrastructure and biodiversity networks, and also in terms of their contribution in landscape terms to the local setting and character to a place.

Local Planning Policy

2.10. Policy ESD 10: 'Protection and Enhancement of Biodiversity and the Natural Environment' of CDC's Local Plan (2011-2031) states that *"The protection of trees will be encouraged, with an aim to increase the number of trees in the District".*

Statutory Designations Relating to Arboriculture

2.11. As confirmed by CDC by email on 2nd July 2019, none of the trees surveyed are subject to a Tree Preservation Order (TPO) nor are they located within a Conservation Area.

2.12. As shown on the magic.gov.uk website, none of the surveyed trees are identified as Ancient Woodland (accessed 2nd July 2019).

Section 3: Baseline Information

Tree Survey Methodology

3.1 A tree survey of the site was completed on 7th November 2018 by a suitably qualified Arboricultural Consultant in accordance with BS5837. For further clarification, please refer to the tree survey explanatory notes in **Appendix 1**.

3.2 In accordance BS5837, the tree survey included all trees within / in influence of the site and the site boundaries that were over 75mm diameter at breast height (dbh). Measured topographical survey data was used to inform the locations and surrounding context of the sites individual and groups of trees.

3.3 Any trees not included within the topographical survey have been approximated using measurements taken during the tree survey and further informed by aerial photography.

3.4 Stem measurements were taken using a diameter tape. Where this was not possible or reasonably practical, measurements have been estimated by eye. Tree heights have been measured using a digital clinometer application.

3.5 The trees surveyed were visually inspected from ground level only. No invasive investigations or climbing inspections were necessary to confirm visual or audible signs of defect or debility and no tissue or soil samples were undertaken. Where identified, signs of substantial defects or debility appropriate to the pre-development context have been recorded.

3.6 The quality and value of trees have been assessed in accordance with the BS5837 Cascade Chart for Tree Quality Assessment included at **Appendix 3**. Grading subcategories (1, 2 and 3) included within the Cascade Chart for Tree Quality Assessment are intended to reflect arboricultural, landscape and cultural values respectively.

Tree Survey Summary

3.7 A total of 23no. individual trees, 24no. tree groups and 3no. hedgerows were identified during the tree survey. Findings for each of the trees surveyed are detailed in the Tree Survey Schedule included at **Appendix 2** and the distribution of the surveyed tree cover is illustrated on the **Tree Constraints Plan (Ref. 11920/P01a) (TCP)** located to the rear of this report. The Tree Survey Schedule provides a tabulated record of the trees surveyed, including; species composition, tree dimensions, life stage, physiological and structural condition, and the arboricultural value of each tree and group of trees.

3.8 The majority of the site's tree cover is contained to the eastern, southern and western site boundaries. A linear collection of pollarded crack willow is present along the eastern boundary which forms an established and cohesive arboricultural feature. The southern boundary includes additional pollard crack willow set other established tree species with sections of lower value vegetation and infill. The western boundary comprises a well-established tree belt to the south (comprising mature stock and understory hedgerow species) and the northern section of the boundary is limited to a hedgerow and scattered tree of reduced arboriculutral merit.

3.9 2no. hedgerows and a group of crack willow is present which define the field boundaries internally. Established amenity planting is also present around the existing pond and the curtilage of the residential building to the south-west.

3.10 None of the trees surveyed were considered to be 'veteran' or 'ancient' in terms of age class. None of the trees surveyed were considered to be of high (Category A) arboriculutral value.

Root Protection Areas

3.11 The TCP shows the approximate extent of Root Protection Areas (RPAs). The RPAs have been calculated in accordance with the methodology set out in Appendices C and D of BS5837, using the stem diameter dimensions obtained during the site visit.

3.12 RPAs are considered to contain sufficient rooting volume to ensure the survival of the tree and should be left undisturbed in order to avoid damage to the roots or rooting environment surrounding the tree. The plotted RPAs have therefore represented a constraint towards the design of the proposals. While developing within RPAs should be avoided, special working methods can be adopted to alleviate the RPA disturbance for cases where the development is considered necessary and unavoidable.

Tree Canopies and Shading

3.13 The distribution of tree canopy cover on and within influence of the site is illustrated on the TCP. Canopies have been plotted at cardinal points for individual and groups of trees.

3.14 The **Appendix 2** Tree Survey Schedule lists the vertical clearance from site ground level to significant tree branching of individual trees. This measurement informs the impacts of accessibility and development beneath tree canopies.

3.15 The principal tree shadow constraints are shown on the TCP and have been plotted in accordance with BS5837 using the current height of surveyed trees. The indicative shade cast by existing surveyed trees signifies the area within which the amenity interests of shading, available daylight and the proximity of trees to any future site uses may be impacted upon should a tree be retained as part of development.

3.16 Where shading is unavoidable, the potential adverse impact of shadowing should also be reviewed on balance with the positive aspects of retaining a degree of canopy shade. BS5837:2012 (para. 5.3.4, a) NOTE 1) states that *"shading can be desirable to reduce glare or excessive solar heating, or to provide comfort during hot weather. The combination of shading, wind speed/turbulence reduction and evapotranspiration effects of trees can be utilised in conjunction with the design of buildings and spaces to provide local microclimatic benefits".*

Section 4: Preliminary Arboricultural Impact Assessment

4.1 This Preliminary Arboricultural Impact Assessment (AIA) details the likely extent of tree losses and development implications in response to the development parameters and access layout for both planning applications A and B.

4.2 The assessment has been informed by an overlay of parameters and access layout drawings and the tree constraints information which is illustrated on the **Preliminary Tree Retention and Removal Plan (11920/P02a)** located to the rear of this report.

Potential Tree Removals

4.3 The 'worst-case' extent of tree removal considered necessary to accommodate the proposed development parameters and new access arrangement for applications A and B are listed below with reference to their arboricultural grading category.

- Tree T1 (Category B)
- Tree T7 (Category B)
- Tree T8 (Category B)
- Tree T9 (Category B)
- Tree T10 (Category B)
- Tree T11 (Category B)
- Tree T12 (Category B)
- Tree T13 (Category B)
- Tree T14 (Category B)
- G1 (Category B and C)
- Group G3 (Category B and C)
- Group G4 (Category B)
- Group G5 (Category B)
- Group G6 (Category B)
- Group G7 (Category B)
- Group G18 (Category B)
- Group G19 (Category B&C)
- Group G21 (Category B&C)
- Tree T2 (Category C)
- G2 (Category C)
- G8 (Category C)
- G17 (Category C)
- Group G20 (Category C)
- Hedgerow H1 (Category C)
- Hedgerow H2 – partial removal of east to west linear section, with removal of north to south linear section (Category C)

4.4 The 'worst-case' tree removal predictions include the loss of internal tree and hedgerow cover of low to moderate arboricultural. This is expected in order to accommodate the main development parcels, together with the removal of the northern section of the western boundary tree and hedgerow cover to accommodate the site access and associated road realignment / footpaths. The retention of the site's principal tree cover, located to the south of the western boundary and the eastern boundary, will be retained.

Replacement Tree Planting Opportunities

4.5 A Strategic Landscape Assessment prepared separately by Re-form Landscape Architecture (Ref. RF18-598-R-01) includes a Strategic Landscape Framework that identifies opportunities or replacement and additional tree establishment across the site as part of the development. This includes the following principles:

- Landscape buffer from western and southern boundaries to accommodate new woodland style planting to strengthen retained tree belts and replace the sections of boundary vegetation that requires removal;
- New tree planting along the new access arrangement to provide a continuation of the green corridor into the site and across areas of open space;
- New open space comprising a new wetland area to the east of the development; and
- Scattered internal amenity tree planting across new street scenes and within unit demises.

4.6 The landscape enhancement opportunities demonstrate that the expected tree losses can be compensated for with new tree planting and a potential net-gain in tree canopy cover can be achieved over time.

Avoidance of Root Protection Areas

4.7 The Preliminary Tree Retention and Removal Plan shows the RPAs of retained trees in relation to the proposed development parameters.

4.8 Where trees will be retained as part the development, the siting of development parameters has been located outside the RPAs. This is demonstrated through sufficient buffers from the retained western and southern boundary tree cover.

Potential Tree Pruning Works and Future Pressures

4.9 The approximate extent of tree shading (for the main part of the day) across the development parameters is illustrated in the Preliminary Tree Retention and Removal Plan. This demonstrates that shade cast by represent a negligible impact upon the development parameters. The offsets from the boundary trees also suggests the minimal to no tree pruning works will be required to retained trees as a result of canopy growth towards new development.

Construction Mitigation

4.10 Should consent be granted, it will be necessary to demonstrate how the above and below ground structures of retained tree cover will be protected during the site preparation and construction phases of development in accordance with BS5837.

4.11 It is therefore recommended that a full Arboricultural Method Statement (AMS) is prepared as part of a reserved matters application or to discharge applicable and suitably worded planning Conditions.

4.12 This will address the definitive impact of a detailed design, with respect to a fixed development layout, including proposed new ground levels, drainage and services.

4.13 An AMS will also set out a practical methodology to the protection of retained trees during the site preparation construction stage, and is recommended to include:

- a schedule and specification of any tree removal/pruning works;
- specifications for barriers and ground protection;
- procedures for any specialist construction techniques and any supervised excavations within RPAs;
- phasing of work;
- an auditable system of site monitoring; and
- a Tree Protection Plan.

Conclusion

4.15 The report details the findings of a tree survey and assessment of arboricultural impact to inform development proposals put forward by Albion Land (2013) Ltd at Catalyst Bicester. The tree survey and impact assessment has been completed in accordance within BS5837:2012.

4.16 None of the trees surveyed are subject to a Tree Preservation Order nor are they located within a Conservation Area. No ancient woodlands, ancient trees or veteran trees were identified on / within influence of the site.

4.17 This assessment is based on the proposed development parameters in order predict the 'worse-case' scenario for tree removals. This relates to internal tree stock of low to moderate arboricultural value and a section of the western boundary tree and hedgerow line which comprises low to moderate value trees. The tree removals are considered necessary and unavoidable to accommodate the new access arrangement and main internal development parcels.

4.18 The principal arboricultural features present on the site as identified within this report will be retained and the development parameters demonstrate a clear design response to their constraints.

4.19 This report identifies that the proposed Strategic Landscape Framework demonstrates that the tree losses can be fully compensated in accordance with CDC's planning policy as it relates to trees. It is recommended that full details of new tree planting are secured via detailed Planting Plan pursuant to a suitably worded planning condition.

4.20 The proposed development is therefore considered supportable from an arboricultural perspective subject to the implementation of the proposed tree replacement and adoption of future tree protection measures for retained trees.

4.21 In the event that planning permission is granted, an Arboricultural Method Statement should be prepared to provide details in terms of protecting the retained trees during the course of the development as detailed within this report. This could be secured by way of a suitably worded planning condition and in conjunction with full demolition and construction details.

Appendix 1: Tree Survey Explanatory Notes

Appendix 1: Tree Survey Explanatory Notes

Tree Numbers

'T' prefixes have been used to identify individual trees and commence with 'T1'.

'G' prefixes have been used to identify groups of trees.

Species

Species are listed by their common name, both in the schedule and in the report text.

Height and Stem Diameter

The stem diameter of single stemmed trees is measured at 1.5m above ground level and given in millimetres (mm). The diameter measurement of multi-stemmed trees is taken immediately above the root flare. Tree heights are measured in metres (m).

Crown Spread and Height of Crown Clearance

Radial crown spread is measured in metres and is listed for each of the four cardinal points. The canopy shape for individually surveyed trees depicted on the accompanying plans accurately represents the canopy spread as measured on-site.

The height crown clearance is measured above ground in metres from the attachment point of the first significant branch, or the height to which the lowest (living) branch reaches; whichever is the lower.

Age Class

The age of each tree is defined as follows:

Young - within the first third of life expectancy;

Early-Mature - within the second third of life expectancy;

Semi-Mature - within the last third of life expectancy;

Mature - specimen at full maturity; and

Veteran – tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. For the purpose of this report the term 'ancient tree' and 'veteran tree' are interchangeable.

Physiological and Structural Condition

Comments are made where any physiological or structural defects are exhibited.

Limitations

The comments made are based on observable factors present at the time of inspection. Although the health and stability of trees in their current context is an integral part of their suitability for retention, it must be understood that this report is not a tree risk assessment and should not be construed as such. While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, it may have not been appropriate, or

possible, to view all parts or all sides of every tree to fulfil the assessment criteria of a risk assessment.

No tree can be considered entirely safe, given the possibility that exceptionally strong winds could damage or uproot even a mechanically 'perfect' specimen. It is therefore usually accepted that hazards are only recognisable from distinct defects or from other failure-prone characteristics of the tree or the site. An assessment of the potential influence of trees upon existing buildings or other structures resulting from the effects of trees upon shrinkable load-bearing soils or the effects of incremental root or branch growth, are specifically excluded from this report.

Un-assessable Risks

Any alteration to the application site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.

The Wildlife and Countryside Act (WCA) 1981 (as amended) makes it an offence to disturb nesting birds or recklessly endanger a bat or its roost. Bats are also a European protected species and are additionally protected under the Conservation (Habitats & c) Regulations 1994 and 2010 (as amended). The survey findings, constraints, opportunities and design or mitigation recommendations included within that report must be read alongside this document.

A lack of recommended work does not imply that a tree does not pose an unacceptable level of risk and likewise, it should not be implied that a tree will present an acceptable level of risk following the completion of any recommended work.

Appendix 2: Tree Survey Schedule

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T1	Ash	17m	800#	7.25	7.25	7.25	7.25	3.00	Mature	Good	Fair	B1.2	Established in field boundary hedgerow. Structure is typical for species. Slightly suppressed in crown to east. Considered to be of moderate arboricultural quality and value.	9.6	289
T2	Silver Birch	11m	300	6.00	4.50	3.00	3.00	3.00	Early Mature	Good	Fair	C1.2	Established in field boundary hedgerow. Lean in stem to N. Reduce future potential. Considered to be of low arboricultural quality and value.	3.6	41
T3	Ash	11m	600	7.00	5.50	5.50	5.50	2.00	Mature	Good	Good	B2	Established in field boundary hedgerow. Good overall form and structure. Cavity in upper stem from previous limb failure. Considered to be of moderate arboricultural value.	7.2	163
T4	Sycamore	10m	500	5.50	5.50	5.50	5.50	4.00 (site)	Mature	Fair	Fair	B2	Established in field boundary hedgerow. Structure is typical for species. No significant defects noted. Considered to be of moderate arboricultural value.	6.0	113
T5	Ash	18m	800	11.25	9.00	8.00	7.00	3.00 (tips) 5.00 (limbs)	Mature	Fair	Fair	B1.2	Established in field boundary hedgerow set back from boundary ditch. Canopy overhangs into site. Slight lean in stem to N. Structure is typical for species. Considered to be of moderate arboricultural quality and value.	9.6	289
T6	Crack Willow	14m	1000	9.25	12.00	9.00	7.00	2.00 (ave)	Mature	Fair	Poor	B2	Established in field boundary hedgerow at south side of ditch / stream. Lapsed pollard with extended lateral limbs. Some previous site side management including crown-lifting works. Considered to be of moderate arboricultural value.	12.0	452
T7	Ash	6m	170	2.75	2.25	1.00	1.50	3.00	Semi Mature	Poor	Poor	C1.2	Established ornamental planting. Decline in crown. Considered to be of low arboricultural quality and value.	2.0	13
T8	Silver Birch	12m	360	2.50	3.00	3.75	4.25	3.50	Mature	Good	Fair	B1.2	Established ornamental planting. Structure is typical for species. No significant defects noted. Mutually suppressed crown to north by T9. Considered to be of moderate arboricultural quality and value.	4.3	59

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T9	Ash	13m	610	7.00	6.50	6.75	6.25	2.00	Mature	Good	Fair	B2	Established ornamental planting. Structure is typical for species. No significant defects noted. Mutually suppressed crown to north by T8. Considered to be of moderate arboricultural value.	7.3	168
T10	Ash	13m	640	7.50	6.25	7.00	7.25	2.00	Mature	Good	Good	B1.2	Established ornamental planting. Structure is typical for species. No significant defects noted. Considered to be of moderate arboricultural quality and value.	7.7	185
T11	Leyland Cypress	14m	750	6.50	6.50	6.50	6.50	2.50 (ave) 5.00 (N)	Mature	Good	Fair	B2	Mature example of species. No significant defects noted. Heavily crown lifted over access road to north. Considered to be of moderate arboricultural value.	9.0	254
T12	Leyland Cypress	14m	750	6.00	5.50	6.00	4.75	2.25 (ave) 5.00 (S)	Mature	Good	Fair	B2	Mature example of species. No significant defects noted. Heavily crown lifted over access road to S. Considered to be of moderate arboricultural value.	9.0	254
T13	Ash	14m	540	8.50	4.25	8.50	7.50	1.50 (tips) 2.75 (limbs)	Mature	Good	Good	B1.2	Established ornamental planting within curtilage of pond feature. Structure is typical for species. No significant defects noted. Minor past management including crown lifting works. Considered to be of moderate arboricultural quality and value.	6.5	132
T14	Silver Birch	14m	390	4.50	4.50	3.50	1.50	2.75 (tips) 3.00 (limbs)	Mature	Good	Fair	B2	Established ornamental planting within curtilage of pond feature. Suppressed crown to east by T13 though not affecting overall structure. Considered to be of moderate arboricultural value.	4.7	69
T15	Ash	22m	800, 700	10.50	8.25	4.00	8.50	6.00 (E)	Mature	Fair	Fair	B2	Forms component of tree line established at western site boundary. 2 x co-dominant stems with suppressed crown to south by T16. Considered to be of moderate arboricultural value.	12.8	514
T16	Crack Willow	20m	1250+	8.50	10.25	12.75	11.00	5.00 (E)	Mature	Fair	Poor	C1.2	Forms component of tree line established at western site boundary. Multi-stemmed at base with decay and with partly collapse structure. Co-dominant stems with heavy leans and ivy growth. Sections of deadwood throughout. Considered to be of low arboricultural quality and value.	15.0	707

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T17	English Oak	18m	1100	9.75	10.00	9.00	9.00	10.00 (E) 6.00 (N)	Mature	Good	Good	B1.2	Forms principal component of tree line established at western site boundary. Good example of the species in late stages of maturity. Forms well-distributed crown with good foliage density. Age-related deadwood throughout crown. Heavy ivy growth should be removed. Considered to be of moderate arboricultural quality and value.	13.2	547
T18	Crack Willow	19m	1200	10.75	8.25	9.00	8.00	3.75	Mature	Fair	Poor	C1.2	Forms component of tree line established at western site boundary. Heavily covered in ivy with poor overall structure. Appears to be in good physiological condition however requires remedial pruning works to improve structure, including partly failed limbs to south west crown. Considered to be of low arboricultural quality and value.	14.4	651
T19	Ash	14m	800	9.50	9.50	8.00	9.00	4.00 (E)	Mature	Good	Fair	B1.2	Forms component of tree line established at western site boundary. Heavily covered with ivy but good overall structure and vitality. Considered to be of moderate arboricultural quality and value.	9.6	289
T20	Ash	14m	650	8.00	7.00	3.00	8.00	5.00 (E)	Mature	Fair	Fair	B2	Forms component of tree line established at western site boundary. Suppressed crown to south by adjacent trees. Covered with ivy and sparse crown to west. Considered to be of moderate arboricultural value.	7.8	191
T21	Ash	13m	500	8.00	7.50	1.50	8.00	3.00 (N)	Mature	Fair	Fair	C1.2	Forms component of tree line established at western site boundary. Heavily suppressed crown to south by adjacent trees. Considered to be of low arboricultural quality and value.	6.0	113
T22	Crack Willow	27m	1000	8.00	7.00	12.00	12.00	10.00	Mature	Fair	Fair	B2	Dominant specimen established at field boundary. Multi-stemmed at base with large co-dominant stems. Average condition overall with no significant defects. Some previous limb tear-outs typical of age and species. Considered to be of moderate arboricultural value.	12.0	452
T23	Crack Willow	27m	1000	9.50	8.25	12.00	6.00	3.00 (tips) 5.00 (limbs) (N)	Mature	Fair	Fair	B2	Dominant specimen established at field boundary. Stem / mid-crown covered with ivy. Forms large main stem forking at 6m into numerous co-dominant stems. Average overall condition. No significant defects noted. Minor previous limb failures typical of age and species. Considered to be of moderate arboricultural value.	12.0	452

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m) N	E	S	W	Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
G1	Ash, Field Maple	14m max	475 max	7.00 max				3.00 (ave)	Early Mature to Mature	Fair	Fair	C1.2/B2	Established trees within field boundary hedgerow. Structures are typical for species. 2 x larger ash within good overall form.	5.7	102
G2	Ash x 3	9m	800 max	6.00 ave				3.00 (ave)	Mature	Fair	Poor to Fair	C1.2	Established trees within field boundary hedgerow. 1 x Ash with kink in lower stem. 1 z Ash with large main stem previously failed at 2m with small crown remaining and associated decay.	9.6	289
G3	Field Maple, Ash, Hawthorn, Blackthorn	9m max	500 max	4.50 ave				3.00 (ave)	Young to Mature	Fair	Fair	B2/C1.2	Field boundary hedgerow with unmanaged trees. 1 x well established field maple of moderate value.	6.0	113
G4	Ash, Field Maple, Hawthorn, understorey Hawthorn, Elm, Blackthorn	19m max	900 max	7.00				3.00 (ave)	Young to Mature	Fair	Fair	B1.2	Established trees line with understorey hedgerow. Trees form cohesive canopied with age-related deadwood throughout crowns. Structures are typical for species in context. Larger trees of moderate value as individuals.	10.8	366
G5	Crack Willow	16m	1100 max	10.50				2.50	Mature	Good	Fair	B1.2	Established in field boundary hedgerow. 3 x trees forming cohesive canopies. Some past limb failures in lower crowns typical of the age and species. Appears to have been previously pollarded at c.3m. Extended lateral limbs on tree to west would benefit from remedial pruning works.	13.2	547
G6	Ash	11m	500 max	7.00				1.50	Mature	Good	Fair	B2	2 x trees established in field boundary hedgerow. Structure is typically for species. Purr main union in tree to west.	6.0	113
G7	Crack Willow, Ash	16m max	750 x 2 max	10.00 max				2.00	Mature	Good	Fair	B2	3 x crack willow and 2 x ash established in field boundary hedgerow. Structure is typical for species and no significant defects noted. Failed limb in crack willow to east of group.	12.7	506
G8	Crack Willow	13m	400 max	3.50 ave				3.00	Early Mature	Fair	Fair	C1.2	Established around pond feature. Structures are typical for the species. Some minor wounding in lower stems.	4.8	72

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m) N	E	S	W	Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
G9	Crack Willow, Ash, Hawthorn	13m	800 max	9.00 max				3.50 (over site)	Mature	Fair	Poor to Fair	B2	Comprises 7 x crack willow established at southern side of boundary ditch / stream. Understorey of ash and hawthorn. Hollowing in stems and failed limbs noted. Crack willow appears to have been pollarded at c.3m with new crown growth. Ditch / stream to north considered to act as barrier to root development into the site.	9.6	289
G10	Crack Willow, Goat Willow, Hawthorn, Ash, Cherry, Elm, Plum	3-6m	200 max	3.00 ave				0.00	Young to Mature	Fair	Fair	C1.2	Unmanaged section of field boundary trees / vegetation. Established southern side of boundary ditch / stream. Incudes pollarded crack willow to 1m. Ditch / stream to north considered to act as barrier to root development into the site.	2.4	18
G11	Crack Willow, Ash, Hawthorn, Blackthorn	15m max	900 max	7.25				3.75 (site)	Mature	Good	Poor to Fair	B1.2	Lapsed crack willow pollards established at southern side of boundary ditch. Hollowing in stems and some limb failures noted. Ditch / stream to north considered to act as barrier to root development into the site.	10.8	366
G12	Crack Willow, understorey Hawthorn, Blackthorn	16m max	1250+	12.00 max 8.00 ave				2.00 (ave)	Mature	Poor to Fair	Poor to Fair	U/B2	Collection of crack willow pollards established in a linear / evenly spaced fashion along eastern boundary. Majority of tree pollarded at 2m with new growth forming crowns. Age-relating deadwood throughout crowns and hollowing split-out limbs in several trees. Likely planted as shelterbelt. Forms collective feature of value and required management for long-term retention.	15.0	707
G13	Hawthorn, Field Maple, Blackthorn, English Oak, Ash	7m	250 max	2.00 ave				3.00 (ave)	Mature	Poor to Fair	Poor to Fair	C1.2	Retained section of field boundary hedgerow previously affected by access road construction to south including removal of half the width of the hedge resulting in poor overall form.	3.0	28
G14	Hawthorn, Plum, Ash, Elder, Apple	7m ave 10m max	300 max	4.00 ave				2.00 (ave)	Early Mature to Mature	Fair	Fair	C1.2	Tree line forming hedgerow structure established along site boundary at south side of ditch. Unmanaged with minor branches overhanging into site.	3.6	41
G15	Ash, Apple, Elder, Goat Willow, Plum, Silver Birch	12m	400 max	6.00 ave				4.00 (trees) 0.00 (scrub)	Early Mature to Mature	Fair	Fair	C1.2/B2	Tree line established along field boundary with trees located at south side of ditch and scrub established on north side of ditch.	4.8	72

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m) N	E	S	W	Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
G16	Hawthorn, Goat Willow, Elder, Field Maple, Ash, Crack Willow, Lombardy Poplar	12m	400 max	5.00 ave				4.00 (trees) 0.00 (scrub)	Early Mature to Mature	Fair	Fair	C1.2/B2	Tree line established along field boundary with trees located at south side of ditch and scrub established on north side of ditch. Scattered early mature poplar set-back with pockets of moderate value trees.	4.8	72
G17	Western Red Cedar, Plum, Pear, Ash, Elder, Cherry	10m max	320 max	4.00 ave				2.00 (ave)	Young to Mature	Fair	Fair	C1.2	Small-stature ornamental trees, shrubs and hedges established in curtilage of residential property. Structures and typical for species and no significant defects noted.	3.8	45
G18	Cherry x 7, Western Red Cedar x 1, Crack Willow x 2	12m max	2x 350	4.50 ave				3.00 (ave)	Early Mature	Fair to Good	Fair to Good	B2	Established ornamental plantings at curtilage of pond feature. Structures and typical for species. Decay in stem 1 x cherry from previous limb failure. Group considered to be of moderate value as a collective with individual trees being of low value.	5.9	109
G19	Ash x 6, Silver Birch x 2	14m max	450 max	4.50 ave				2.50	Early Mature to Mature	Fair to Good	Fair to Good	C1.2/B1.2	Established ornamental plantings at curtilage of pond feature. Forms moderate value group as a collective with individual trees being of low value. 1 x larger silver birch of greater value.	5.4	92
G20	Goat Willow, Ash, Crack Willow	9m max	400 max	4.50 ave				1.50 (ave)	Early Mature to Mature	Fair	Poor to Fair	C1.2	Self-seeded trees established on edge of pond feature. Poor overall structures.	4.8	72
G21	Ash x 2, Silver Birch x 2, Broad-leaved Cockspur Thorn	15m max	490 max	6.00 ave				2.50 (ave)	Mature	Fair to Good	Fair to Good	C1.2/B1.2	Established ornamental plantings at curtilage of pond feature. Structures and typical for species. 1 x small stature thorn in poor condition.	5.9	109
G22	Crack Willow, Ash, Norway Maple	19m max	800 max	6.75 ave				3.00 (ave)	Early Mature to Mature	Fair to Good	Fair to Good	B2	Forms component of tree line established along western site boundary. Includes 1 x larger crack willow to north-east of group.	9.6	289
G23	Hawthorn, Field Maple, Elder, Ash, Crack Willow	7m	250	3.00 ave				0.00	Mature	Fair	Fair	C1.2	Understory trees and shrubs forming hedgerow structure along western site boundary. Scrappy appearance overall / lack of active management.	3.0	28

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m) N	E	S	W	Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
G24	Field Maple, Ash	14m	6x 275	7.00 ave				2.25 (ave) (E)	Mature	Fair	Poor/Fair	B2	Tree line established along western site boundary. Trees have multiple stems at bases from previous felling / coppice management now with mature crowns with poor structures overall. Heavy ivy growth through with lean 1 x field maple into site. Group requires thinning / remedial pruning work to improve structure.	8.1	206
H1	Hawthorn, Field Maple, Ash, Blackthorn	7m trees 3m understorey hedge	300, 200, 100 max 150 ave	5.00 (trees) 1.00 (understorey hedge)				3.50 (trees)	Young to Mature	Fair	Fair	C1.2	Field boundary hedgerow with scattered small-stature trees. Understory hedge flailed at sides together with lower crown of trees.	-	-
H2	Blackthorn, Hawthorn, Ash	2m	75	0.25				0.00	Mature	Fair	Fair	C1.2	Field boundary hedgerow maintained by flail cutter defining field boundaries. Double staggered arrangement aligning ditch in western parts.	.9	3
H3	Hawthorn, Blackthorn	5m	100 max	1.00				0.00	Mature	Good	Fair	C1.2	Section of unmanaged field boundary hedgerow.	1.2	5

Appendix 3: BS 5837:2012 Cascade Chart for Tree Quality Assessment

Appendix 3: BS 5837:2012 Cascade Chart for Tree Quality Assessment

TREES FOR REMOVAL				
Category and Definition	**Criteria**			**Identification on Plan**
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 category U 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. (**NOTE**: Category U trees can have existing or potential conservation value which it might be desirable to preserve)			**DARK RED**
TREES TO BE CONSIDERED FOR RETENTION				
Category and Definition	**Criteria - Subcategories**			**Identification on Plan**
	1. Mainly Arboricultural Values	**2. Mainly Landscape Values**	**3. Mainly Cultural Values, including Conservation**	
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 those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant 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)	**LIGHT GREEN**
Category B **Trees 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 remedial 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 benefits.	**MID BLUE**
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	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 temporary/transient landscape benefit.	Trees with no material conservation or other cultural value.	**GREY**

Plans

Tree Constraints Plan (TCP) (11920/P01b)

Preliminary Tree Retention and Removal Plan (11920/P02b)

Key:

- Site Boundary for Application A
- Site Boundary for Application B
- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Category U - Trees Recommended for Removal
- Approximate Extent of BS5837 Calculated Root Protection Areas (RPAs)
- BS 5837 Calculated Tree Shadow Constraints

**Denotes trees and groups not identified on topographical. Locations approximated using measurements taken on site.*

N

0m 10m 20m 30m 40m 50m

Rev B - Application boundary amendments - 05.08.19 - LS
Rev A - redline boundary added - 02.07.19 - LB

Project Name

Catalyst Bicester

Drawing Title

Tree Constraints Plan

Tyler Grange

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Scale	Date
1:1000 @ A1	August 2019
Drawn by	Checked by
LB	JP
Drawing No.	Revision
11920/P01	B

Bicester Avenue
West Bay
Balancing Pond
Shelter
A41
Ditch
Def
Balancing Pond
Ash stump
H1
G1
H1
G2
H2
G13*
G13*
El Sub Sta
T4
H3
T1
G5
G6
G7
T2
G4
G3
H2
Cat U failed Crack Willow
Lower value Goat Willow and Hawthorn
T3
Leaning Crack Willow to north
G12
G22
G19
G21
T15
T16
G20
G23
T17
65.3m
T18
G18
T13
T14
T12
T11
G24
Fallen tree
T19
T10
T20
T21*
T22
T23
G17
T9
T8
T7
G8
H2
Stump
Cat U (split main stem)
Stump
FB
Pond
Drain
Drain
G16*
Existing ditch to north of T6 likely to prohibit root development into area of proposed attenuation feature.
T6*
G15*
Drain
G14*
T5*
Crack Willow stump recently flail cut to 3m
G9
G10
G11
Fallen tree to north
Edgeward Bdy
G12
Drain
65.3m
nano-British settlement (site of)

Key:

- Site Boundary for Application A
- Site Boundary for Application B
- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Category U - Trees Recommended for Removal
- Approximate Extent of BS5837 Calculated Root Protection Areas (RPAs)
- BS 5837 Calculated Tree Shadow Constraints
- Likely Extent of Tree Loss
- Development Area for Application 1
- Development Area for Application 2

Denotes trees and groups not identified on topographical. Locations approximated using measurements taken on site.

N

0m 10m 20m 30m 40m 50m

Rev A - new proposed layout received on 24.6.19 LB
Rev B - new parameter being used 01.08.19 LB

Project Name

Catalyst Bicester

Drawing Title

Preliminary Tree Retention and Removal Plan

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Scale	Date
1:1000 @ A1	December 2018
Drawn by	Checked by
LB	JP
Drawing No.	Revision
11920/P02	B