

3. Application Site & Proposed Development

Appendix 3.1

**ARBORICULTURAL IMPACT ASSESSMENT
UPDATED**

**FORT HALSTEAD,
KENT**

**ARBORICULTURAL IMPACT
ASSESSMENT
UPDATED**

A Report to: Merseyside Pension Fund

Report No: RT-MME-152162 Rev E

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REPORT VERIFICATION

This study has been undertaken in accordance with British Standard 5837:2012 “Trees in Relation to Design, Demolition and Construction - Recommendations”.

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Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are based upon the data provided by the client (listed within Table 1.1, Section 1.4). If the development proposals change then this report will require updating to assess the impact of the amended development.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In April 2018, Merseyside Pension Fund commissioned Middlemarch Environmental Ltd to undertake an Initial Tree Constraints Assessment of trees growing on land at, and adjacent to, Fort Halstead in Kent. A Tree Condition Survey had previously been undertaken by Gavin Jones Ltd and was used to provide baseline data for this assessment. The data for the Gavin Jones Ltd report is located within Appendix A of the Initial Tree Constraints Assessment, report number RT-MME-128206-01 Rev A.

Merseyside Pension Fund Middlemarch Environmental Ltd was then commissioned to compile an updated Arboricultural Impact Assessment in respect of an amended scheme, to be submitted alongside a revised planning application, May 2020.

This report details the impact that the proposed development will have upon the site's existing tree stock and sets out recommendations for the subsequent mitigation or avoidance of impact. The study has been completed in accordance with guidance contained within British Standard BS5837:2012 '*Trees in Relation to Design, Demolition and Construction – Recommendations*'.

This document has been issued to accompany a Hybrid Planning Application which is predominantly in outline, save for detailed main access and the Village Centre.

1.2 SITE DESCRIPTION

The site under consideration is an irregular shaped parcel of land, approximately 131.89 ha in size, which is located adjacent to the London Orbital Motorway in Halstead, within the Sevenoaks district of Kent at Ordnance Survey Grid Reference TQ 4982 5933.

The study area is located within a predominantly rural area to the south of Halstead, Kent. The surrounding area is dominated by a mixture of agricultural fields, scattered woodlands, and residential development.

The Survey Area contains native and naturalised scattered trees of all ages and species dominated by English oak, Sweet chestnut, Silver birch and Common ash. The whole site is included within Woodland Tree Preservation Order 4 (2016). The site is surrounded on all sides by woodland which has either been planted or existed originally as Ancient Replanted Woodland and Ancient and Semi-Natural Woodlands to provide screening of the Fort Halstead site.

Centrally, tree cover is scattered around the complex of buildings but was generally found to be of high to moderate quality with mature canopy proportions which would have provided camouflage from aerial view during the site's military presence. Trees had generally been managed in a sympathetic manner with minimal intervention which had resulted in a large proportion of high-quality trees with few notable defects. The trees surveyed were generally in good health and exhibited minor defects such as minor deadwood and small hanging branches.

The location of the trees surveyed can be found on Middlemarch Environmental Ltd Drawing Number C128206-01-01, contained within Section 6 of this report.

1.3 DEVELOPMENT PROPOSALS

It is understood that a revised planning application is being prepared to bring forward a comprehensive mixed-use regeneration of the Fort Halstead site.

The proposals include a new Village Centre, which secures and responds to the key heritage assets on site and makes provisions for community uses and amenity space. The proposed development is understood to include:

Hybrid application comprising, in outline: development of business space (use classes B1a/b/c) of up to 27,773 sqm GEA; works within the X enclave relating to energetic testing operations, including fencing, access, car parking; development of up to 635 residential dwellings; development of a mixed use village centre (use classes A1/A3/A4/A5/B1a/D1/D2); land safeguarded for a primary school; change of use of Fort Area and bunkers to Historic Interpretation Centre (use class D1) with workshop space and; associated landscaping, works and infrastructure. In detail: demolition of existing buildings; change of use and works including extension and associated alterations to buildings Q13 and Q14 including landscaping and public realm, and primary and secondary accesses to the site.

2. STATUTORY PROTECTION

2.1 TREE PRESERVATION ORDER AND CONSERVATION AREA DESIGNATIONS

No works should be undertaken on trees identified as being subject to Tree Preservation Orders (TPOs) unless full, detailed planning consent has been acquired. Works include pruning, topping, lopping, uprooting, wilfully damage or wilful destruction of trees included in an order can potentially result in prosecution. Any proposed pruning works will need to be fully specified and agreed within any detailed planning application as part of the separate phased applications. If works are not included within the individual planning applications, a separate TPO application will need to be submitted to the Local Authority for permission to undertake any works (approximately an 8-week process).

A desk study was undertaken to identify any TPOs or Conservation areas which are present at or near the site. Using the Sevenoaks District Council local view mapping system online, it was identified that the entire site is designated under Woodland Tree Preservation Order ((TPO) 16/004/TPO, No. 4 of 2016 – W1).

The desk study also identified that the site is not situated within a conservation area.

2.2 PROTECTED SPECIES

Bats

Mature trees often contain cavities, hollows, peeling bark or woodpecker holes which provide potential roosting locations for bats. Bats and the places they use for shelter or protection (i.e. roosts) receive European protection under The Conservation of Habitats and Species Regulations 2010 (Habitats Regulations 2010, as amended). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. Consequently, causing damage to a bat roost constitutes an offence.

Generally, should the presence of a bat roost be suspected whilst completing works on any trees on site then an appropriately licensed bat worker should be consulted for advice.

Birds

Trees and hedgerows offer potential habitat for nesting birds which are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Some species (listed in Schedule 1 of the WCA) are protected by special penalties. This legislation makes it an offence to intentionally or recklessly damage or destroy an active bird nest or part thereof.

As the trees on, and adjacent, to the site provide potential habitat for nesting birds all tree work should ideally be completed outside the nesting bird season (Generally March to September).

If this is not possible then the vegetation should be subject to a nesting bird inspection by a suitably experienced ecologist prior to commencement of works. If any active nests are identified then the vegetation, and a defined buffer zone, will need to remain in place until the young have naturally fledged.

3. ARBORICULTURAL IMPACT ASSESSMENT

3.1 INTRODUCTION

This section of the report details the potential impacts that the proposed development may have upon the site's tree stock. The assessment has been based upon the documents detailed in Table 1.1 with reference to the results of the Arboricultural Survey undertaken in June and July 2018 (RT-MME-128206-01).

The location of the trees can be found on Drawing Number C128206-01-01 in Section 6 and a schedule of the trees surveyed can be found within the Arboricultural Survey (RT-MME-128206-01).

The proposals identify the majority of tree cover is to be retained and incorporated as part of the development proposals. All of the existing Ancient Woodland is to be retained and standoff development distances surrounding the Ancient Woodlands will be maintained in accordance with current guidance.

Where possible, the retention of high and moderate quality trees has been prioritised, however, as with any form of development on this scale and on such a heavily treed site, some tree loss is inevitable. This report therefore aims to provide a balanced, pragmatic approach to ensure tree loss is minimised and new mitigation planting is sufficient to compensate the loss of any trees across the site.

The planning application for the vast majority of the site is in Outline only and therefore further detailed assessment of each Phase of development will be required as part of future Reserved Matters applications to confirm the potential impact of development on the existing tree cover. The attached Tree Retention Plan (Drawing Number C152162-01), however, shows the potential impact of tree cover, based on the Parameters Plan (005561_Parameter Plans_Rev C_635 homes) to assist decision makers through the course of the application.

3.2 DETAILED APPLICATION AREA

The Detailed Application area includes the area surrounding buildings Q13 and Q14 which are both Listed Buildings. Six trees (T1538, T1539, T1540, T1543, T1544 and T1545) are positioned within or in close proximity of the detailed application area and mostly to the south of the adjacent buildings. One large, mature, high quality oak tree (T1538) is located to the north of the existing buildings and supports a large, spreading canopy which dominates the area and partially covers the adjacent buildings.

The high-quality oak tree T1538 is to be retained and incorporated into the proposed development of the village centre, however, the removal of the remaining five existing trees (T1539, T1540, T1543, T1544 and T1545) will be required. Two of the trees proposed for removal (T1539 and T1540) were considered low quality and three trees (T1543, T1544 and T1545) were considered moderate quality. Therefore, mitigation in the form of new, high quality tree planting, more suited to the new environment and identified within the Landscape Proposals will provide sufficient mitigation to compensate this moderate loss of tree cover.

The loss of T1539, T1540 is required as part of the construction of a glazed link connecting buildings Q13 and Q14 which will jointly form a new visitor centre as part of the wider Village Centre. Both of these trees were considered low quality and therefore this minor arboricultural impact should be considered negligible. The loss of the remaining tree cover (T1543, T1544 and T1545) is as a result of the construction of the Village Square adjacent to Crow Drive, to the south of the site.

3.3 OUTLINE APPLICATION AREA

The Outline Application area includes the wider Fort Halstead site including Crow Drive which provides the northern approach to the main existing gatehouse from Otford Road. The detailed design of the wider site is yet to be finalised through further Reserved Matters planning applications for each Phase of development, however, the Parameters Plan (005561_Parameter Plans_Rev C_635 homes and attached Tree Retention Plan, Drawing Number C152162-01, identifies anticipated tree removal to facilitate the proposed development. Trees have been divided into three distinct classifications to provide clarity as part of this application which include:

- Existing Trees to be retained (Green)
- Existing Trees to be removed (Red)
- Existing trees which could be retained subject to detailed design for each Phase of development (Blue)

The proposals have been designed to provide sufficient developable area whilst retaining a large proportion of the existing tree cover which is to be positioned in areas of public open space around the periphery of the site and along internal green routes that dissect the individual Phases of development. The retention and inclusion of a high proportion of tree cover (70%) as part of the development will result in a high-quality, balanced development with a realistic amount of tree retention. Since the last design review of Fort Halstead 56 trees have now been retained (27 Category A trees, 20 Category B trees, eight Category C trees and one Category tree).

3.4 ANCIENT REPLANTED WOODLAND AND ANCIENT AND SEMI-NATURAL WOODLANDS

The site contains a high proportion of woodland, some of which is Ancient Replanted Woodland and Ancient and Semi-Natural Woodland as identified on the MAGIC (Multi-Agency Geographic Information for the Countryside) website. The vast majority of these woodlands were considered to be of high quality and formed by a mix of mainly broadleaf tree species. The proposals show the retention and safeguarding of the Ancient Woodland found within the application boundary during the Arboricultural Assessment through the inclusion of suitable standoff distances greater than 15.0 metres.

Several Sustainable Drainage Systems (SuDS) are positioned within high-quality broadleaf woodland (W13) to the north of the site which, during the course of future Reserved Matters, will need to be addressed through relocation outside of the woodland and beyond the Root Protection Areas (RPAs) identified.

The latest proposed plans show a proposed road going through a high-quality woodland (W11). Ideally the existing road should be utilised as the proposed works will require the removal of high-quality trees. If the existing road is to be utilised, then this will reduce the conflict between the trees and proposed works.

3.5 BROADLEAF WOODLAND

Numerous dense broadleaf woodland parcels surround the site and offer screening as well as green corridors and areas of potential recreation through the implementation of footpaths, rides, and glades. The Outline application identifies sufficient standoff distances between the woodland parcels and the extent of development with the exception of several SuDS basins which stand within parcels of woodland and the adjacent buffer.

3.6 SUSTAINABLE DRAINAGE SYSTEM (SuDS)

The location of several SuDS ponds is shown on the Parameters Plan (005561_Parameter Plans_Rev C_635) homes positioned across the site forming a network of drainage ponds accessible to individual development areas. Several ponds conflict with the surrounding tree cover which was generally found to be high to moderate quality. The position of these ponds will therefore need to be relocated as part of the Reserved Matters planning application for each Phased area to avoid unnecessary tree loss of high and moderate-quality trees.

3.7 POLHILL FORT

Polhill Fort was constructed in 1895 as one of a number of centres built to protect London in the event of French invasion. The Fort is a now Scheduled Monument and an important feature of the site and wider area and therefore degradation of the monument should be avoided.

Although all of the trees within and surrounding the Fort are currently shown as being retained, to ensure long term retention of this feature, recommendations would include felling of the trees located on the earthworks and sowing of a chalk grass and wildflower seed mix. The actions of tree roots growing through the soil and movements of the roots through the action of the wind causes micro fractures in the soil over time, leading to degradation of the Monument structure. Removal of trees in favour of less impacting grasses and wildflowers would limit erosion while providing a new area of wildlife habitat and improve views for visitors over Sevenoaks.

3.8 SITE SUMMARY IMPACTS

Overall, the proposed development will require the potential removal of 210 individual trees. It should be noted that fourteen trees identified for removal were considered to be unsuitable for long-term retention during the Arboricultural Survey of the site. The removal of these trees would be required irrespective of the proposed development due to their poor condition and as such their loss should not be a material consideration during the planning process.

Eighty-one of the trees to be removed were assessed as having a high retention value. A further sixty-nine were assessed as being of moderate retention value. Such specimens offer the potential to make a long-term contribution to the landscape character of the site, however, it should be noted that the overall proportion of moderate and high value specimens identified for removal as part of the proposed development is largely exceeded by the proportion of Category A and B trees to be retained within the site. As such, it is not considered that the visual amenity of the overall site will be overly impacted upon.

The remaining trees, and groups, that require complete removal are all specimens considered to be of a low retention value in the Arboricultural Survey. It is not considered that the removal of these trees should be a constraint to the development of the site as they are either trees of poor form offering limited future life expectancy or young trees that can be replaced by new planting of similar trees.

Chart 3.1 shows the current quantity of trees being retained, removed, and considered against the current proposed plans.

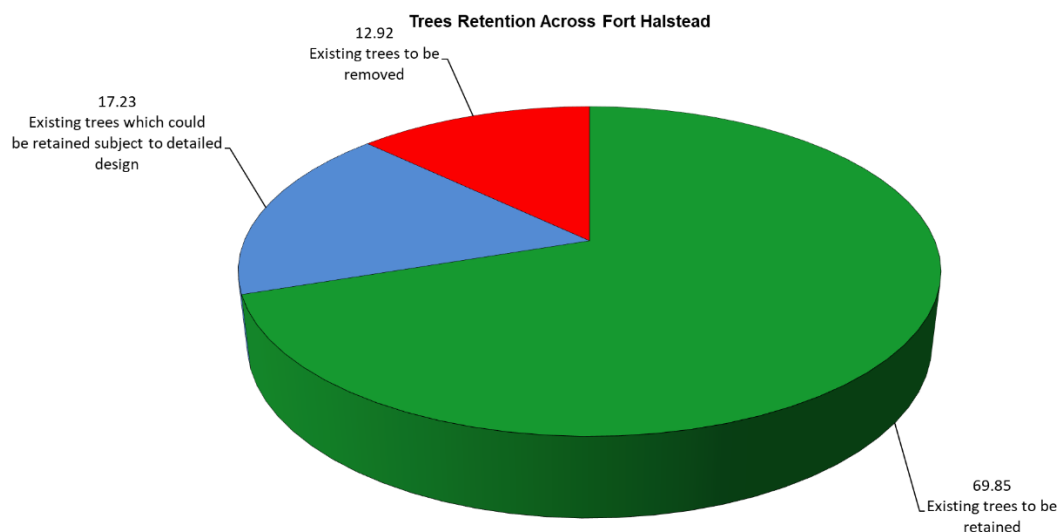


Chart 3.1: Tree Retention Across Fort Halstead

The quantity of trees potentially being retained, removed and those trees that could be retained subject to further Reserved Matters planning applications are broken-down into their retention categories in Table 2.1.

Description	Category								Total	
	U	U %	A	A%	B	B%	C	C %		
Total Trees	110	6.77	795	48.92	450	27.69	270	16.62		1625
Trees to be retained	84	5.17%	644	39.63%	291	17.91%	116	7.14%	1135	69.85
Existing trees which could be retained subject to detailed design	11	0.68%	70	4.31%	90	5.54%	69	4.25%	240	14.77
Existing trees to be removed	15	0.92%	81	4.98%	69	4.25%	85	5.23%	250	15.38

Table 3.1: Shows the breakdown of tree categories and their proposed retention

In addition to the tree retention stated within Table 3.2, three woodlands require partial removal to allow the construction of (SuDS). These woodlands include W7, W8 and W13.

Generally, the current Hybrid Application plans are positive and consider the higher quality trees, groups, and woodlands. During the survey 1625 trees, eight groups and 14 woodlands were surveyed, currently only

12.92% of the existing tree cover is proposed to be removed and three woodlands require partial removal to facilitate the SuDS installation. Further assessment of the potential impact of each Phase of the Reserved Matters applications will be required to determine the percentage loss of trees identified as 'Existing trees which could be retained subject to detailed design'.

Since the last design review of Fort Halstead additional 56 trees have now been retained (27 Category A trees, 20 Category B trees, eight Category C trees and one Category U tree).

The trees to be removed as part of the Outline Planning Application are detailed within Table 3.2 and are identified on the Tree Retention Plan, Drawing Number C152162-01 which accompanies this report.

This project is currently an Outline Application and therefore further consideration of proposed tree loss will be detailed for each Phase of the development as part of Reserved Matters applications.

Tree Number	Species	BS5837 Category
1	Common Oak	A
2	Sycamore	A
3	Sycamore	A
8	Sweet Chestnut	A
9	Sweet Chestnut	A
10	Sweet Chestnut	A
11	Sweet Chestnut	A
12	Sweet Chestnut	A
14	Crab Apple	A
16	Sweetgum	U
20	Sweet Chestnut	A
26	Silver Birch	A
27	Himalayan Birch	U
30	Sweet Chestnut	A
31	Common Oak	A
42	Sweet Chestnut	A
43	Common Oak	A
44	Common Oak	A
45	Sycamore	A
71	<i>Robinia</i> sp.	C
72	<i>Robinia</i> sp.	C
73	Common Oak	A
114	Common Oak	A
115	Whitebeam	C
116	Whitebeam	C
117	Whitebeam	C
129	Common Oak	A
163	Leyland Cypress	C
164	Leyland Cypress	C
165	Cider Gum	B
166	Common Ash	C
167	Common Ash	C
168	Common Ash	C
169	Sweet Chestnut	B

Tree Number	Species	BS5837 Category
170	Sweet Chestnut	B
171	Common Ash	B
172	Common Oak	A
173	Common Oak	C
174	Common Oak	B
175	Sweet Chestnut	U
179	Sweet Chestnut	B
180	Common Oak	C
182	Common Oak	B
183	Common Oak	B
188	Sweet Chestnut	C
189	Sweet Chestnut	C
226	Common Oak	A
227	Sweet Chestnut	B
228	London Plane	A
229	London Plane	B
241	Whitebeam	C
242	Whitebeam	C
243	Common Horse Chestnut	B
245	Common Laburnum	A
249	Common Oak	B
250	Common Oak	C
253	Crab Apple	B
254	Common Oak	B
255	Common Oak	C
256	Common Oak	B
257	Common Oak	C
258	Common Oak	A
259	Common Oak	A
281	Common Oak	C
289	Goat Willow	C
290	Whitebeam	C
291	Common Oak	C
292	Silver Birch	A

Tree Number	Species	BS5837 Category
293	Sweet Chestnut	C
296	Silver Birch	B
297	Common Oak	C
321	Sweet Chestnut	B
322	Sweet Chestnut	B
323	Sweet Chestnut	B
324	Sweet Chestnut	B
325	Common Walnut	B
345	Common Walnut	A
350	Silver Birch	U
351	Common Ash	B
372	Crab Apple	B
384	Silver Birch	C
385	N/A	C
386	Silver Birch	C
389	Scots Pine	C
390	N/A	C
391	Common Oak	C
394	N/A	C
395	Crack Willow	C
398	Common Oak	C
402	Common Oak	C
403	Silver Birch	U
427	Silver Birch	B
429	Sweet Chestnut	B
486	Sweet Chestnut	B
570	Common Oak	A
571	Sweet Chestnut	A
572	Sweet Chestnut	A
573	Common Oak	A
574	Sweet Chestnut	A
575	Sweet Chestnut	A
576	Sweet Chestnut	A
584	Common Oak	A
602	Common Oak	A
650	Sweet Chestnut	A
658	Common Oak	A
662	Common Oak	B
666	Common Oak	C
677	Common Oak	A
680	Common Oak	A
681	Common Oak	A
682	Common Oak	A
683	Common Oak	A

Tree Number	Species	BS5837 Category
686	Silver Birch	U
700	Sweet Chestnut	A
701	Sweet Chestnut	B
704	Common Oak	B
705	Common Oak	B
723	Sweet Chestnut	B
725	Common Oak	B
726	Common Hawthorn	C
727	Myrobalan Plum	C
728	Crab Apple	C
729	Common Oak	B
730	Common Horse Chestnut	A
736	Sycamore	A
738	Common Oak	A
739	Wild Cherry	C
740	Crab Apple	U
741	Wild Cherry	C
742	Myrobalan Plum	C
743	Crab Apple	C
744	Crab Apple	C
745	Crab Apple	C
759	Crab Apple	C
772	Wild Cherry	C
773	Wild Cherry	B
774	Wild Cherry	B
775	Wild Cherry	B
776	Silver Birch	B
777	Silver Birch	U
778	Silver Birch	C
779	Common Oak	A
816	Wild Cherry	B
817	Silver Birch	U
818	Silver Birch	C
819	Silver Birch	C
820	Silver Birch	C
821	Silver Birch	C
824	Silver Birch	C
825	Paper Birch	C
826	Paper Birch	C
827	Paper Birch	C
828	Scots Pine	C
829	Paper Birch	C
830	Paper Birch	C

Tree Number	Species	BS5837 Category
831	Scots Pine	C
853	Paper Birch	C
860	Common Oak	A
861	Whitebeam	B
862	Norway Maple	B
864	Whitebeam	B
886	Common Oak	B
887	Goat Willow	C
901	Crack Willow	C
902	Common Ash	B
903	Common Ash	U
918	Common Ash	B
970	Common Ash	B
971	Common Oak	B
972	Common Oak	A
974	Common Oak	A
975	Common Oak	A
1060	Common Oak	C
1061	Wild Cherry	B
1062	Wild Cherry	B
1063	Silver Birch	C
1068	Silver Birch	C
1081	Wild Cherry	C
1087	Common Oak	A
1088	Common Beech	B
1089	Common Hawthorn	C
1090	Common Oak	A
1091	Common Oak	A
1106	Wild Cherry	C
1107	Wild Cherry	C
1502	Wild Cherry	C
1503	Crack Willow	A
1504	Sycamore	A
1526	Common Horse Chestnut	A
1527	Dawn Redwood	C

Tree Number	Species	BS5837 Category
1528	Common Oak	A
1529	Common Oak	A
1038	Silver Birch	A
1044	Whitebeam	B
1546	Common Oak	B
1547	Common Oak	B
1548	<i>Prunus 'Amanogawa'</i>	U
1549	<i>Prunus 'Amanogawa'</i>	U
1550	<i>Prunus 'Amanogawa'</i>	U
1559	<i>Prunus 'Amanogawa'</i>	A
1571	Common Oak	B
1572	Common Oak	B
1576	Common Oak	B
1582	Common Horse Chestnut	A
1584	Common Oak	U
1585	Whitebeam	U
1586	Whitebeam	C
1587	Whitebeam	C
1588	Myrobalan Plum	A
1589	Common Oak	B
1590	Myrobalan Plum	C
1591	Lawson Cypress	C
1592	Lawson Cypress	C
1594	Lawson Cypress	C
1595	Wild Cherry	C
1596	Wild Cherry	C
1597	Holm Oak	B
1627	Holm Oak	A
1631	Sweet Chestnut	A
1632	Common Oak	B
1633	Common Oak	A
1638	Common Oak	A
<u>Key</u>		
*: Partial removal of trees within group.		

Table 3.2: Trees being removed as part of the Outline Planning Application

3.9 TREE PRUNING

3.9.1 Detailed Application

The Detailed Application area may require the crown lifting of T1538 to provide sufficient space for the construction of the glazed connection between buildings Q13 and Q14. An Arboricultural Method Statement will be required to detail the extent of pruning in conjunction with the proposed works and tree protection measures.

3.9.2 Outline Application

Following the completion of the proposed tree removal, as detailed in Section 3.2.1 and agreed through subsequent Detailed Planning Applications, there are areas of the proposed development which will require the completion of access facilitation pruning works.

The need for pruning works on retained trees shall be identified as part of an Arboricultural Impact Assessment at each Reserved Matters application following consultation with the Project Arboriculturist and/or the Local Planning Authority.

No work to any trees can be undertaken following approval of an Outline Planning Application due to the Woodland Tree Preservation Order which includes all trees across the site. All tree work would need to be agreed as part of further, Reserved Matters applications for each Phase of the development or be included as part of a Tree Works Application for TPO'd trees.

The Woodland Trust have noted that T136 and T137 display veteran characteristics and therefore require protection in accordance with best practice principals and current guidance. Veteran trees are important components of the landscape, their importance can include a variety of attributes including ecological, social, cultural, and historic value. Veteran Trees are a material consideration within the planning process and their importance is specifically recognised within the National Planning Policy Framework. The latest design review shows these trees as retained.

Further assessment at SSM Level 5 of those Veteran trees and their communities may be required sufficient to meet best practice principals and current guidance. From an ecological perspective veteran trees provide a rare, specialist niche habitat and therefore preservation of this habitat is considered highly important.

Preservation of Veteran trees will enhance biodiversity of the site and wider woodland area. Veteran trees, Ancient Woodland and Ancient Semi- Natural Woodland require greater protection due to their fragile nature and therefore RPA calculations defined as a distance equal to 15 times the trees stem diameter, or five metres beyond the canopy, whichever is the greater is required in accordance with current guidance for these niche habitats. Where possible the buffer zone should contribute to wider ecological networks and woodland flora and fauna species.

To preserve these trees the design should accommodate such trees and be adequately protected during the demolition and construction phases of this project.

3.10 IMPACTS FROM DEMOLITION AND RELATED OPERATIONS

3.10.1 Building Demolition and Removal of Hard Surfaces

There are no areas within the Detailed Application area where the demolition of existing buildings is required within close proximity to retained trees however, some areas of hardstanding will need to be removed within the RPA's of the retained oak tree adjacent to the site.

The Outline Application area contains numerous buildings both above and below ground which will be demolished as part of the wider, individual development parcels. The potential impact on trees surrounding the areas of demolition will therefore need further consideration during each, separate Reserved Matters application. At this stage, there are no aspects of the proposed development expected to require the removal of existing areas of hardstanding within the RPAs of retained trees, however, each area of development will inevitably need to remove areas of hardstanding where trees are present.

3.10.2 Removal of Services

The locations and specifications of existing and proposed underground services were unknown at the time of writing, however, it is considered likely that existing services are unlikely to be used due to their age and current site use which is incompatible with the proposed residential use of the site. If the installation of new services is required within the RPAs of retained trees, tree protection measures should be discussed with the Project Arboriculturist during pre-commencement site meeting for each Phase.

3.10.3 Ground Remediation

No information regarding proposed soil remediation works have been considered, however, the previous use of the site is considered likely to have resulted in areas of soil contamination that may require excavation and disposal, or treatment works, to be undertaken within the RPAs of retained trees. As such, ground remediation works may impact upon retained trees and therefore further consideration will be required following the completion of an in-depth soil analysis.

3.10.4 Ancillary Operations

Access to the site for demolition plant will be via the existing road network into and around the site. As noted in Section 3.2.2 some access facilitation works to the crowns of trees overhanging the access road may be required to minimise the potential for harm impact to overhanging branches. Any proposed works required will need to be further considered for each Phase of demolition and development.

3.11 DIRECT IMPACTS FROM CONSTRUCTION

3.11.1 Works within RPAs

Following completion of tree removal, as detailed in Section 3.2.1, there are no aspects of the proposed development which are expected to require works within the RPAs of retained trees.

Should the need for construction works within the RPAs of retained trees be identified, these shall only be carried out following consultation with the Project Arboriculturist and/or the Local Planning Authority.

3.11.2 Works within Canopy Spreads

The construction of the new atrium and renovations of the two existing retained buildings as part of the Detailed Application area will require works beneath the canopy of a large, mature oak tree (1538). These works should be undertaken cautiously following the production of an Arboricultural Method Statement which will include the positioning of roots through ground investigation and design of foundations that will limit the potential for impact upon the roots of the tree.

Several areas of the wider application site have the potential to require work within the canopy spreads of retained trees which will require further consideration at the Reserved Matters application stage for each phase to ensure the proposed layouts are achievable and any impacts are minimised.

3.11.3 Working Space

There are several areas on site where working space for the construction of new buildings will be required within the RPAs of retained trees. The Detailed Application area will require construction work within the RPA of the large, mature oak tree (1538). An Arboricultural Method Statement will therefore be required to ensure any works are supported by suitable ground protection and canopy protection.

3.12 IMPACTS FROM CONSTRUCTION RELATED OPERATIONS

3.12.1 Site Access

It is understood that construction access to the site will be provided along the existing access from Crow Drive towards the northern site boundary. As noted in Section 3.2.2 it will be necessary to undertake some access facilitation pruning works to minimise the potential for branch damage to occur due to the passage of demolition and construction plant. It will also be necessary to ensure retained trees adjacent to the access routes are protected from potential impact damage by the installation of tree protection barriers prior to the commencement of the demolition and development Phases.

3.12.2 Site Compound, Contractors Car Parking, Delivery and Storage of Materials

Material deliveries to the site will utilise the existing access points. Retained trees will be protected from harm by the prior installation of tree protection barriers and the completion of access facilitation pruning works.

The site compound, contractor's parking and areas for materials storage within the site have not been identified at this stage, however, the nature of the site is such that several opportunities for these areas to be established well away from retained trees exist.

3.13 POST-DEVELOPMENT IMPACTS

3.13.1 Shading

Shading of the connective link between the two buildings, Q13 and Q14, is likely, however, the tree is positioned to the north of the buildings and therefore any shading is likely to be to a minimal extent and unlikely to result in the need to prune the canopy to improve light levels.

Further assessment of the shading impact from retained trees will be required for the individual Phases of development as Reserved Matters applications are considered. The Arboricultural Assessment identified a high proportion of large, mature trees supporting full canopies across the site and therefore, full consideration will be required to ensure a harmonious relationship between the new dwellings and retained trees can be achieved.

3.13.2 Privacy and Screening

The proposed development has been designed so that the majority of the trees around the site boundaries are to be retained to provide privacy and screening of the site and limit the potential for wider landscape impact of the proposed development.

3.14 SUMMARY OF IMPACTS

The proposed development of the site will inevitably impact on the number of trees found during the Arboricultural Assessment as a result of the proposed tree removal. However, given the relatively high proportion of existing trees within the site are to be retained and that further decisions on the amount of tree loss and mitigation planting for each Phase will be required in future Reserved Matters applications, the potential tree loss should be considered acceptable.

4. MITIGATION AND PROTECTION

4.1 INTRODUCTION

This section of the report details the initial protection and avoidance measures suggested to prevent harm to the retained trees.

4.2 GENERAL TREE PROTECTION

4.2.1 Construction Exclusion Zone

To minimise the potential for harm to occur to the root systems and canopies of retained trees during development it will be necessary to implement construction exclusion zones throughout the site which can be detailed within individual Arboricultural Method Statements for each Phase of development. These are areas surrounding the trees' RPAs and canopies in which no construction works, or related activities, will be undertaken.

It is recommended that the exclusion zones are afforded protection at all times through the use of tree protection barriers and/or ground protection (specified in accordance with BS5837:2012). No works that cause compaction of the soil or severance of tree roots, except where undertaken in accordance with the guidance provided within this document, will be undertaken within any exclusion zone.

Where construction operations are to be undertaken within the construction exclusion zone, the working practices detailed in Section 4.3 should be followed.

4.2.2 Tree Protection Barriers

The protective barriers should be erected prior to the commencement of any site works e.g. before any materials or machinery are brought on site or the stripping of soil commences.

The protective barriers are to be constructed in accordance with the specification detailed in BS5837:2012 (Figure 2; Appendix 2). Any variation to the specification of the protective barrier will be agreed with the Local Planning Authority Arboricultural Officer.

4.3 MITIGATION OR AVOIDANCE OF IMPACTS

4.3.1 Site Setup and Logistics

Prior to commencement of demolition or construction, a plan should be prepared detailing the locations in which activities related to the establishment of a site compound, contractor's car parking areas, material storage areas and associated works are to occur. All such areas should be located outside of the RPAs of retained trees and can be detailed within Arboricultural Method Statements for each Phase of development.

5. ARBORICULTURAL METHOD STATEMENT

Arboricultural Method Statements for each Phase of development will be required for the whole site as various aspects of the proposed demolition and development will be undertaken within the RPAs of retained trees.

The purpose of a Method Statement is to ensure that all site operations can occur with minimal risk of adverse impact upon trees that are to be retained. The documents will identify all areas where specific working methods will be required to ensure protection to trees. The document will also specify the location and extent of tree protection barriers and ground protection.

In relation to this development the Method Statement should address the following:

- Demolition Schedule for the whole site;
- Final site layout for each Phase of development;
- Suitable site access, material storage and site compound locations for each Phase of the development;
- Final protective barrier and ground protection locations and specifications for each Phase of the development;
- Phased approach to development works to ensure retained trees are not impacted upon from demolition and new access construction works;
- Extent of access facilitation pruning works to be undertaken for each Phase of the development; and
- Pre-commencement site meeting for each Phase of the development.

6. DRAWINGS

Drawing Number C128206-01-01 – Tree Constraints plan (Site Wide Plan)

Drawing Number C128206-01-01 – Tree Constraints Plan

Drawing Number C125162-01 – Tree Retention Plan (Site Wide Plan)

Drawing Number C152162-01 – Tree Retention Plan

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