



Prepared by David Meagher Environment Consultants for  
AM Design Architects Limited's client - Mr. Michael Roberts

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*Preamble: The AIA, AMS and Tree Protection Plan has been compiled in accordance with BS 5837:2012 – 'Trees in relation to design, demolition and construction'. A Tree Protection Plan should be read in accordance with this report. Revised (p.17 as advised by Arun District Council Tree Officer – insertion of 'not' in bold type and underlined)*

## Summary and Recommendations

1.0 Summary and recommendations to retain and protect trees during demolition and construction. (following Arboriculture officer's comments).

## General Information

2.0 Validation - includes additional recommendations via ADC appointed as requested and advised by arboriculture officer Mr. Bernie Harverson

3.0 Instructions

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## 1.0 **Summary Retention of Norway Maples (T1 & T2)** Please see accompanying tree protection plan (ref: TP/243/FL.

Following the Tree Officer's regarding the submission of version 1 of this document, the report concurs that Norway Maples should be retained. The trees are now under the protection of a new Tree Preservation Order which stipulates that the trees must not be harmed or felled, or surgery carried out without permission from Arun District Council the presiding local authority.

The trees are sound and have been designated B 1 (with a Landscape subcategory) as they contribute as a visual amenity to the community. Summerhill Drive residents are provided with a long view from within the cul-de-sac and to users of adjacent pedestrian footpaths as a 'full stop' and entrance to the private drive. The trees will not be harmed during the construction process providing adequate tree protection measures are taken, which are detailed in the arboriculture method statement ('AMS') and as illustrated in the associated Tree Protection Plan. See appendix 1 & 2 Tree Schedule).

The residents' association's letter states that the conifer hedge on the West boundary West should be removed providing a landscape scheme replaces the planting.

In response to the council tree officer's comments that the original *'AMS report is vague and not detailed enough with respect to protection measures to ensure that these two trees survive the demolition and construction'* Mr Harverson continues *'I am certain that this site can be developed with these trees in situ but I will need to see a supporting and detailed AMS report and Tree Protection Plan before I am prepared to recommend it for approval'*.

**In response, we have submitted this detailed AMS and Tree Protection plan as a condition for the development can go ahead.**

## 2.0 **Recommendations**

Tree roots have intruded into the root protection area and canopies extend over the footprint of the existing bungalow to be demolished. The trees require protection during the construction process, with the erection of protective barriers and the designation of a construction exclusion zone (see Tree Protection Plan and Appendix 6 ref: TP/243/FL for details BS 5837:2012) to prevent root damage by soil compaction or machinery storage of materials or any other practices harmful to the tree's structure. In addition, extra measures, including a detailed breakdown of the demolition process to enable the trees to survive, can be found (comments Mr Harverson: *What I wanted to see was how they would demolish the building carefully pulling it in on its own footprint away from the trees and then once they have exposed bare earth erect protective fencing at the full distances specified in their schedules or lay ground protection etc. etc.'*). The recommendations in addition include designated areas for storage and materials handling and routes for the passage of materials (as detailed on the TP Plan) as well as direction which the demolition should proceed.

This, amended 'supporting and detailed' AMS/AIA report embraces the tree officer's comments and his requirements which is the submission of an enhanced tree protection plan drawn up provided as a standalone document. The AMS and TP plan systematically covers pre-construction, demolition, construction and post demolition phases. The ramifications with regard to the demolition process due to the root protection zone intruding beneath the foundations, and the canopy overlapping the roof are dealt with in detail. The recommendations include additional measures which need to be taken on exposure of the soil beneath the floor levels which require removal.

***This document is amended with the following information as stated in Harverson's comments in red type:***

- ***An amended schedule regarding life expectancy of trees***
- ***Single option which is the retention of the Norway Maples.***
- ***The updated AMS in much greater detail***
- ***A meticulous AMS for tree protection in demolition process, above and below ground (when to install protective fencing, treatment to exposed soil level)***
- ***Tree Protection Plan additional tree protection measure added.***

Extra protection measures are proposed such as an increased amount of Heras fencing on road side and in demolition roof tiles and timbers are to be removed by hand. If the removal of the bungalow to ground level reveals concrete flooring this should be retained as it protects the RPA until the final phase of development. Demolition should be by hand as much as possible with machinery operated outside the RPA. One of the recommendations is that structural walls are dismantled top down, by hand if possible in a direction away from the trees with an exit route which is shown on the Tree Protection Plan which also takes demolition material away in a path away from the trees.

Extra care needs to be taken when removing the façade facing west, which is close to the trees, removing material in a controlled manner away from the trees. The material removed immediately from the site. The Local Authority (LA) to be contacted on commencement of demolition so the council Tree Consultant can opt to be present, with organised inspections at all stages of work as outlined in the Arboriculture Method Statement inspections list. Inspections are to be recorded and logged.

Protective fencing: The AMS recommends that the protective fencing is installed as soon as the full extent of the RPA has been revealed. In addition to the fencing shown on the TP Plan in the AMS and appendix, used to enclose a construction exclusion zone (CEZ), further fencing is recommended for the grass verge. The land is in the ownership of the landowner; therefore, no permissions need to be sought regarding the erection of Heras fencing on the edge of the grass area adjacent to Summerhill Drive.

The architect's plans show that the new bungalows are sited away from the existing trees, out of the RPAs, but fencing will remain in situ until after the site has been fully developed and landscaped. The fencing will provide the means of protection for the two trees as outlined in this report and supporting the information in the appendix and Tree Protection Plan during the whole period due to a reduced risk after demolition. The fenced areas will remain for the whole of the operation and post operational phases, during demolition and construction until the project is completed. Robust Heras type fencing and prominent signage to explain that the construction exclusion must not be entered will be affixed to the fencing as detailed in the AMS.

Although the trees are located outside the curtilage of the development site, within a grass verge adjacent to Summerhill Drive, they are separated from the existing property by a boundary panel fence. This fence is flimsy, the verge soft. The reason why this report recommends that additional Heras type fencing is required to restrict root damage by vehicles frequently parking close to the trees. The Tree protection is in accordance with the recommendations found in BS 5837:2012 Trees in relation to design, demolition and construction.

## General Information

### 2.0 Introduction and Validation

This report contains the supporting tree information relating to the study area located at land adjacent to 84 Flansham Lane, Bognor Regis, West Sussex PO22 6AH and the proposal to demolish existing bungalow and replace with two detached residential units.

For local authority validation requirements, the report comprises:

An arboricultural assessment, with an analysis of the arboricultural implications concerning the development proposals and its impact on site trees or those located in proximity whose RPA's which impinge on the development area.

An arboriculture method statement outlining processes and procedures to ensure the survival of retained trees.

Tree survey & schedule compliant to BS5837:2012 concerning the development and its impact on existing trees, showing trees to be retained and to be removed as well as measures to be taken to protect trees on or adjacent to the development area.

A plan depicting North containing tree survey information.

#### ***Additional Information (following comments by the Council Tree Officer)***

- ***An amended schedule regarding life expectancy of trees***
- ***The option for retention of both trees (T1 & T2)***
- ***Statement regarding method of demolition to ensure tree protection both above and below ground (AMS & AI)***
- ***Tree Protection Plan to include additional tree protection measures. The trees are subject to a Tree Preservation Order (reportedly made October 2017).***

### 3.0

**Instruction:** To 'prepare an arboricultural method statement and tree report to accompany the application for the demolition of existing bungalow and the erection of two dwellings in compliance with BS5823:2012 to satisfy planning requirements detailing mitigation and protection of *existing* trees through an arboricultural method statement and accompanying survey and arboriculture assessment.

**Architect:** AM design Architects Ltd.

**Issued by** Leeza Aldis-Hobbs Chartered Architect ARB RIBA SPAB and confirmed by email on 05/10/2017

### 4.0 The Development address and description

Address: 84 Flansham Lane Felpham Planning Application: FP/180/17/PL

Demolition of 1 No. dwelling & erection of 2 No. dwellings

A single storey bungalow occupies the site in question which fronts onto Flansham Road A259, a busy trunk road linking Bognor Regis in the West to Littlehampton in the East. Although traffic has

somewhat reduced with the Bognor relief road this is a busy road nonetheless. The Southern boundary of the corner dwelling is in the private Summerhill Drive which is managed by the Hurstwood Residents' Association.

## 5.0 Purpose of report

This report is in relation to a planning application located in Summerhill Drive Felpham Bognor Regis relating to a planning application for two new build single storey dwellings in replacement of an existing bungalow. The report has been produced to demonstrate that the implications of the proposed development in relation to both landscape, arboricultural and amenity value of existing and proposed trees for the site has been comprehensively accounted for both design and build phases.

The purpose of this report includes providing a plan and specifications for the protection of existing trees and recommendations to ameliorate the impact of the design and improve landscape and amenity value for the community. A survey identified trees to be removed, retained and those which need to be protected from potential damage during the period of construction. A Tree Protection Plan has been provided (see appendix) showing the location of protective fencing and Construction Exclusion Zones (CEZ). Arboriculture Method Statement is included which details the measures necessary to be taken relating to tree works and tree protection implemented during the construction process.

## 6.0

**Survey objectives:** to survey the subject trees located within the grass verge adjacent to 84 Flansham Lane House for the proposed development of two single storey dwellings and the demolition of exiting single story bungalow, in order ascertain whether trees related to the site could be potentially affected by the development and the construction process associated with the proposed building works. (This includes site trees where the root structure may intrude into the development area). This report assesses general condition and provides a planning integration statement for the proposed development to provide a means of protecting the trees from any potential damage by the building process.

## 7.0 Site Visit:

Carried out on 15 October 2015 on a still afternoon. Overcast.

The tree survey's objectives were carried out with the aim to:

Identifying the individual tree species present at the site by means of visual inspection; defining the approximate age, condition and canopy spread of all individual mature trees identified and the value of these within the development context;

The survey broadly assessed the condition and arboriculture and landscape value of the trees and the existing ornamental hedge within, and in close proximity to the development site area, paying particular attention to two Norway Maples adjacent to the development site area, in order to prepare an assessment in accordance with BS 5837 Trees in Relation to Construction (2012).

Observations from site visit:

The two most significant trees can be seen by passers-by from the public highway, are important because they form a statement at the entrance to the drive.

T1 and T2 are Norway Maples (*Acer platanoides* - see section 17 for photos). T1 is a purple cultivar, the second green leaved is of the species type. Both trees are relatively young, were planted at or near the same time given their similar height spread and girth. The trees are 7 metres in height. A mature specimen can reach a height of between 25-30 metres.

The existing Norway Maples provide amenity and landscape value. Both trees assessed are associated with RPAs which intrude into the development area. The Norway Maples are outside the construction area separated by a two-metre panel fence within a grass verge.

The trees are both around 7 metres in height but have been crown lifted in recent years with several cuts close to the main stem. Poor tree surgery has led to some unsightly callousing of the wounds, with some cuts made very close to the trunk without a collar where callousing is only partial.

Both trees are healthy individuals despite the unsympathetic tree work mentioned previously. The trees benefit the community, because of their amenity and visual (landscape) value which is enjoyed by passers-by crossing the entrance to Summerhill Drive. Views into the drive of the Maples are afforded, the reason why they have been classed as category 'B1' trees. It is not envisaged that the trees will require tree surgery works in the near future.

### **8.0 Scope:**

This report is compliant with the requirements of BS5837, (2012) trees in relation to design, demolition and construction including a full tree survey identifying the category and condition of site trees.

Two significant trees are within the curtilage of the site development which straddles both 84 Flansham Lane and Summerhill Drive have been mapped and mitigated against any adverse impact caused by the development proposals.

This AI Statement discusses the potential impacts of tree loss or injury above or below ground due to the proposals, to inform the AMS so that recommendations can be made to preserve and conserve retained trees as far as is practicable.

A condition of planning includes the provision of an Arboriculture Impact Assessment (see section 14) which provides a means for monitoring and to assess site activities during construction, advising on practices which could potentially harm existing or newly planted trees as well as advise on matters pertaining to tree growth, abscission and other seasonal or cyclical changes to trees during the site works and construction phases which could delay the build process. This applies to tree management during demolition and construction and any other work which may need to be performed on existing site trees as the construction proceeds, aftercare and maintenance to ensure the trees' vitality.

The report provides a means of communication between the Local Authority Arboriculture Department /Officer and site process where unforeseen circumstances could potentially compromise arboricultural content and where a solution can be found but also to gain the LA's confidence that the developer will safeguard the trees.

This report is only concerned with the prominent trees within or around the proximity of the site that could influence the development of this site. It takes no account of any trees outside this remit or of structural issues regarding existing buildings. It includes a preliminary assessment based on the site visit at the time of inspection and documents provided are valid until site conditions change.

### 9.0 Limitations:

The survey and assessment were carried out at ground level. Observations and conclusions are based on visual inspection for the purposes of the report in relation to requirements laid down by Arun District Council planning department. This report does not form a structural survey.

All visual observations, recommendations and conclusions are relevant to condition of the trees experienced on the day of the inspection. Any subsequent changes to the development site which affect or are conflict with outside these recommendations are the responsibility of the proprietors, and developers of the study area. Trees are living structures that cannot be guaranteed as completely safe. Trees can suffer damage under normal conditions. Regular inspections will aid in identifying any potential problems before they become a danger. Unusual weather conditions, changes in soil, soil levels and changes to surroundings may result in a dramatic change in the trees health. This report is valid for twelve months following the day of inspection.

### 10.0

|                                                                                                      |                                                                                                                                                       |                                      |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| <b>Location:</b><br>84 Flansham Lane Bognor Regis West Sussex PO22 6AH                               | <b>Ref:</b><br>Planning:                                                                                                                              | <b>Date of Report:</b><br>16/10/2017 |
| <b>Report Prepared by:</b> David Meagher (BA Hons) Landscape Architecture, Arboriculture and Ecology | Date of Inspection:<br>13/10/2017                                                                                                                     |                                      |
| <b>Survey Inspector(s):</b> David Meagher                                                            | <b>Application ref:</b><br>FP/180/17/PL                                                                                                               |                                      |
| <b>Local Authority:</b> Arun District Council                                                        | <b>Contact:</b><br><a href="mailto:Simon.Davis@arun.gov.uk">Simon.Davis@arun.gov.uk</a><br>Appointed Bernie Harverson<br>Tree Officer and consultant. |                                      |

Location:



Site is located on corner of B2259 Flansham Lane and Summerhill Drive

### 11.0 Description of study area

The study area is located two miles from the centre of the A259. The location is suburban post war ribbon development and can be found at the entrance to Summerhill Drive which is maintained and managed by the local authority in consultation with the Hurst wood Residents Association. Summerhill Drive is a private resident only street. The residents' association have paid special notice to the entrance to the road with the erection of a brick and flint sign with the street name in gold writing. The residents' association require sympathetic treatment to the entrance of the estate. The subject trees are located to the south of the development lying within a small strip of grass verge which is within the ownership of the developer, the development area is beyond a panel fence between garden and the trees and the bungalow which is earmarked for demolition.

### 12.0

**Planning Context:** Proposed demolition of existing bungalow and erection of two single story dwellings in an area covered by a 'blanket tree preservation order.

**12.1** 84 Flansham Lane is situated in an area, which is served by what is commonly termed as a blanket Tree Preservation Area. The two trees closest to the development have been served a Tree Preservation Orders since going to press. Local Authorities blanket cover large areas because the trees are either significant as a grouping or a mass, add considerable conservation, landscape, visual

or amenity value or the number of significant or important trees are too numerous to list individually.

**12.2** A tree preservation order, referred to as a 'TPO', is an order made by a local planning authority ('LPA') in respect of trees or woodlands. The principal effect of a TPO is to prohibit: the cutting down, uprooting, topping, lopping, wilful damage, or wilful destruction of trees without the LPAs consent. The cutting of roots is potentially damaging and so, in the Secretary of State's view, requires the LPAs consent. Anyone who, in contravention of a TPO, wilfully damages a tree in a way that is likely to destroy it, is guilty of an offence. Anyone found guilty of this offence is liable, if convicted in the Magistrates Court, to a fine of up to £20,000. In serious cases a person may be committed for trial in the Crown Court and, if convicted, is liable to an unlimited fine.

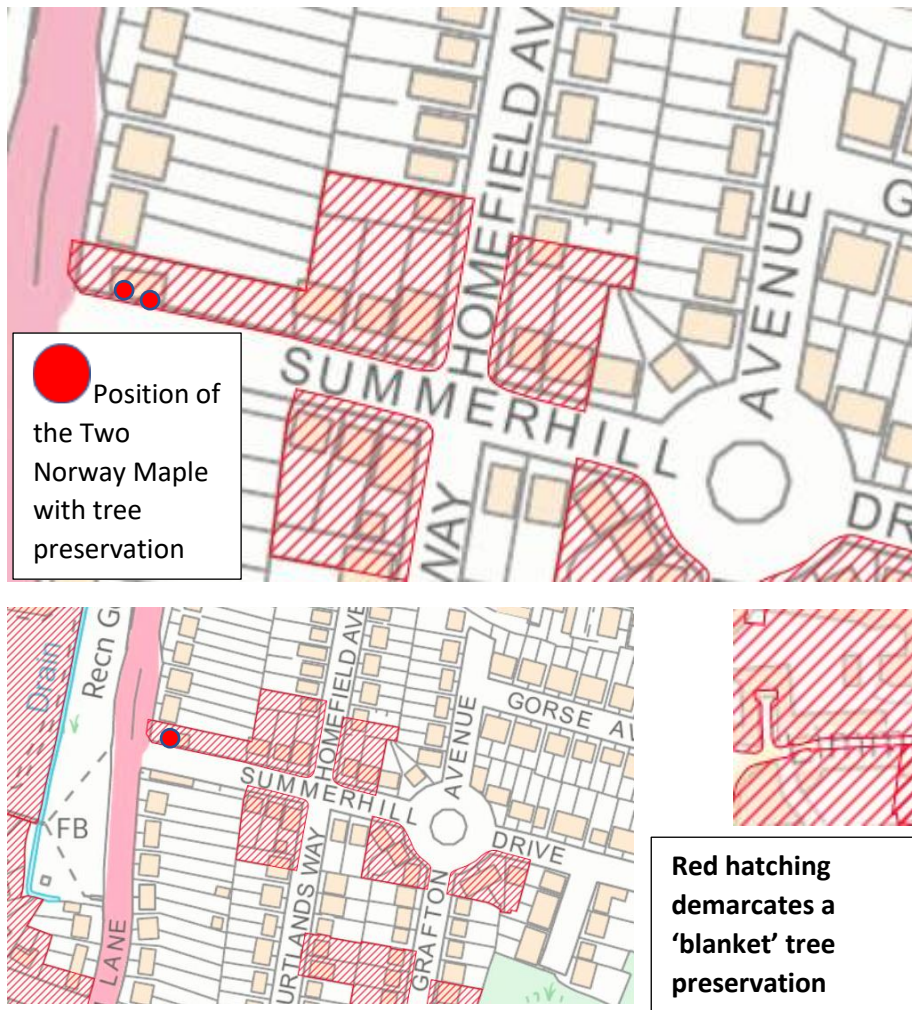
In the case of Hurstwood residents' association, it is acutely aware that the entrance to the drive should be protected from adverse impact from construction due to the loss of trees.

*Firstly no detail has been shown on the plans of the two mature trees and the conifer hedge that are growing in the verge in Summerhill Drive. This is necessary to assess how the grass verge, trees and conifer hedge will be treated and also for that matter the type of boundary to be provided between the bungalows and the grass verge. This is very important as the Residents Association is keen to work with the developer on improving the visual aspect of the access into the estate as, I assume, these two properties will be included with an address in Summerhill Drive.*

In the case of this planning application, individual trees are protected and any work required or application to fell or remove trees in or adjacent to the property requires an application to Arun District Council Planning Department for consideration.

The Arboriculture Method Statement recommendations are in line with the requirements of the Residents' Association including the need for careful landscape treatment by a qualified landscape architect.

The residents' association has a pragmatic approach to the removal of the existing boundary hedge: *that two bungalows are now proposed on the development site the Residents Association are happy for the conifer hedge to be removed and the frontage of the bungalows to be visible from Summerhill Drive which will incorporate the properties better into the street scene. In these circumstances it is important that the boundary provided is a dwarf wall similar to that provided for other adjacent properties and elsewhere on the Estate. It is also important that the verge is suitably landscaped with trees/shrubs to aesthetically enhance the development.*



### 13.0 Documents used

Plans and elevations associated with planning application FP/180/17/PL including concerns raised by Hurstwood Residents' Association (dated 20 September 2017). Arun District Council Planning Portal Tree Preservation Orders.

**This part of the document contains Specific Information which details the tree protection process.**

A full tree survey is carried out and schedule provided with a Tree Protection Plan (see appendix 2 and plan ref. FP/180/17/PL) is to provide baseline information which informs the process. Together with this information and the information regarding the development proposals an arboricultural implications statement is formulated. This in turn informs decisions and recommendations on trees which are to be retained, those that require work and those which are to be removed and also provide valid and factual reasons for the decisions. Following on the Arboricultural method statement provides details on how these recommendations and decision are to be implemented in the life time of the project.

### 14.0 Arboriculture Implications Assessment

Arboricultural Issues in relation to the following phases:

- Pre-site preparation

- Demolition Phase
- Construction Phase
- Post Construction

### **Access and Egress (vehicles and Materials).**

All sites are unique, the location of access and egress can detrimentally affect existing trees. The implications for the 84 Flansham Lane involves site movements, the removing of demolition materials and other site waste as well as delivery and handling of materials as well as the movement of personnel in and out of the site. The development site and existing bungalow are within grounds which contains a large enough garden fronting onto Summerhill Drive, for access and storage of materials so that they can be sited away from the subject trees (see t p plan: TP/243/FL).

Demolition materials must be removed from site immediately to prevent extra demand on allocated storage space and kept away from the root protection areas.

Materials delivered to the site should be transported to the rear (East) via Summerhill Drive unloaded and moved into the designated unloading area, away from the areas occupied by the Norway Maples where there will be no impact existing trees either below or above ground from vehicles. (see tree protection plan: TP/243/FL).

### **Boundaries**

A panel fence divides and separates the trees from the site. Unless the pane fence is to be replaced, the fence can be used as one side of the Construction Exclusion Zone.

### **Above Ground - Existing Canopies**

The existing canopies overlap the roof area of the bungalow to be demolished which if continued unheeded could result in damage to the upper parts of the tree. Specific in work (demolition) practices listed in the AMS will prevent damage. There are no apparent overhead services on site which pass through or near the existing trees. This is a private unlit road without street lighting or visible signs of overhead telecommunications cabling.

### **Pruning**

The existing trees (T1 & T2) require no tree pruning work as care in the demolition phase as outlined in the method statement should prevent possible damage.

### **Below Ground**

#### **Intrusion into root protection areas.**

The tree survey has established a root protection area suggesting that roots intrude under the bungalow which requires demolition. The extent to which to roots penetrate beneath the derelict bungalow is unknown. Damage below ground due to demolition is a high likelihood, for this reason measures need to be taken to prevent this happening. This is outlined in the AMS.

#### **Services (below ground implications)**

The surveyor has not been provided with drawings which illustrate installation of underground services although potential damage has been mitigated in the AMS. Existing services imply that there

is no need for new services to be installed. The site is large enough for new services to be 'run in' away from the root protection areas without harm to tree roots.

**Storage of materials:** Implications of noxious materials or chemicals stored nearby can cause damage if containers are leaked or spilt. The large garden provides room on site for the storage of materials and machinery which has also implications of compaction. Mitigation has been dealt with in the AMS.

Arboricultural Implications regarding the project phases:

Pre-project stage/pre-site preparation:

A planned or strategic approach, involving all parties who influence the site which can affect the health and wellbeing of the trees, site developer, architect, site agent tree consultant, landscape architect should meet and plan a phased project to implement recommendations which are proposed through the AIA and AMS. This includes involving stakeholders such as residents' groups, and local council representatives. Implications are numerous for example a breakdown in communications can cause the wrong action at the wrong time, an action which isn't logged to an executive decision could lead to damage to trees if a planned cause of action is altered.

The tree consultant recommendations need to be communicated these through this document TP plan with survey, report and specifications to those responsible for implementing the tree protection measures to keep fully informed so as to prevent damage to the existing two Norway Maples. The tree consultant's recommendations in the form of tree protection measures, and the responsibility to implement the report, once agreed with the LPA, becomes a binding document for the site developers to enforce.

Tree preservation Orders:

The trees are under Tree Protection Orders. The LPA will be vigilant in this respect with implications are of serious legal consequences if damage occurs.

Demolition

The demolition of the existing bungalow has far reaching arboricultural implications because trees root and canopy have grown into the area occupied by the building both above ground and below ground. If measures aren't taken as determined in the AIA/AMS and Tree Protection Plan serious potential harm could be inflicted on the Norway Maples.

To prevent loss of, or damage, being positioned just metres away from demolition, tree protection will be installed prior at the commencement of site works, prior to the commencement of demolition but also when the RPA is revealed during demolition. Uncontrolled dismantling or removal of building material could lead to soil compaction in tree rooting areas or result in physical damage to the trees above ground which could adversely affect the trees' long-term health.

If the steps are followed as written in the Arboriculture Method Statement for a controlled and methodical demolition phase (see AMS) there will be no or minimal impact to the trees' roots, stems or their branches. The use of Tree Protection Fencing and Ground Protection Measures are essential (AMS). During the construction phase, as outline in the AMS heavy machinery should not be operated in proximity of the trees or materials stored. The arboricultural implications have already been noted regarding physical damage below and above ground, machinery may well compact soil or cause physical damage. There is ample space for machinery to operate for dragging materials away from the front and rear gardens without the fear of tree damage to canopy or to root zones.

## Construction Phase

Detrimental arboricultural implications during the construction phase are similar to those noted in the demolition phase should work proceed without protective measure being taken. As in the demolition phase this requires fenced tree protection, CEZ establishment as well as other measures already listed to prevent tree damage as outlined in the AMS. Due to the location of the new bungalows, away from the trees, the probability of damage is low but if construction goes unheeded the probability will be increased.

### Roadside vehicles and parking:

High side vehicles at a similar height to the trees' branches and leaves can cause physical damage, parking on soft verges can cause compaction, standing water or suffer diesel.

### Storage and handling

If areas are not protected and designated storage zones aren't identified, spillage of noxious or polluting liquids may take place. Other implications include root damage from the storage of materials against trees, or compaction from site vehicles such as dumpers or topsoil and aggregate heaped over root areas. These can cause long term damage to the two existing Norway maples.

## Post Construction phase.

If concrete floors remain from the demolition process, retained in construction process to protect root zones they will need to be lifted. Arboriculture implications on removing floors and excavating deeper into existing levels can cause root damage.

### Landscaping

Landscaping poses similar dangers to those posed during the construction phase. Landscaping can damage trees during planting operations, use of machinery and storage of material. Tree protection should have to be retained during this phase (as described in the AMS). Tree protection should not be removed if there is landscaping to be carried out within proximity of the Root Protection Zones with the CEZ maintained until these operations have ceased.

**Premature removal of tree protections.** Implications of the premature removal of barriers and lifting of the CEZ should be considered. The implications can be of damaging consequences. The tree consultant and LPA need to be informed when at this stage of the operation.

## 15.0 Arboriculture Method Statement

### Generally:

The Arboricultural Method Statement outlines step by step procedures and when the order the steps are taken to provide maximum tree protection trees to be retained to ensure maximum survival chances.

This section should be read in relation to the following documents: tree schedule Tree Protection Plan (see appendix 1 & 2 Tree protection plan TP/243/FL), details and specifications for protective barriers and fencing (see appendix 6), RPA Radii Table and tree planting details (appendix 3).

The AMS sets out the scheduling and methodology for all proposed works in relation to the proposed new development in proximity to the trees located adjacent to the site boundary.

All works detailed in this method statement are compliant to recommendations contained in BS5837:2012 and BS3998:2010. The AMS considers data collected from the site visit and tree survey carried out on 15 October 2017. (See the tree protection plan which indicates tree positions, root protection areas and construction exclusion zone crown spread, retention categories, TP/243/FL) and additional extra measures of protection.

### **The phases and order of operations:**

- Pre-site preparation
- Demolition Phase
- Construction Phase
- Post Construction

### **Pre-site Preparation**

Documents:

A copy of the AMS should be made available prior to the pre-site meeting so that all parties are briefed. A copy should be lodged in the site hut and be available for reference by the Site Agent/Manager and other officials during the period of site occupation.

All parties should be provided with copies of the AIS/AMS and Tree Protection Plan at the pre-planning stage meeting. Copies and plans should also be sent to the LPA (normally six hard copies of each).

Pre-meetings and inspections are listed at the end of the AMS suffice to say that a meeting between architect contractor and tree consultant and or Council Tree Officer should take place prior to any site activity. The arboricultural documents are to be presented orally by the tree consultant to inform the planning meeting and answer any questions.

Commencement:

The site agent will instruct the Local Planning Authority on commencement of works for inspection will be by tree consultant and or council representative responsible to make site visits to supervise and monitoring the works related to trees which are to the erection of protective fencing and signage for the CEZ and other protection measures

### **Erection of Protective Barriers**

The first construction act of construction is to erect and fence off the Root Protection Zones and provide barriers to provide a tree safe construction exclusion zone (see tree plan TP/243/FL) to isolate the two Norway maples from any form of construction interference, to prevent incursion into the root protection zone or within reach of the canopies where site activities may cause damage to the trees above ground. (T1 & T2 see tree protection plan TP/243/FL )

The Barriers are to be constructed in accordance with BS5837 figure 2 the line of which is shown by a black dotted line on TP Plan TP/243/FL. An acceptable method is to erect tree protection barriers in the form of Heras type design of fencing consisting of a vertical and horizontal scaffold framework, braced to resist impacts, with weld mesh panels securely fixed or bolted using scaffold clamps or similar.

Waterproof notices will be affixed to the fencing at 5m intervals along the protective fencing at a height of 1.5 metres, which are unobstructed and readily visible to operatives and site visitors. The notices notify personnel that the fenced area is a Construction Exclusion Zone and protected area, which read 'Do not enter' (See tree protection plan: TP/243/FL and appendix 6),

The Heras type fencing (see Tree Protection plan TP/243/FL) when completed and in place will be inspected by the tree consultant and/or LPA representative to ensure that the barrier is securely braced to prevent movement of the fence during construction, withstand impacts or high winds and to a high standard. Site works should not commence until the work has been approved. The barriers are to be robust and strong enough to withstand impact or high winds. Any faults or weaknesses discovered are to be rectified before approval is given.

Fencing to remain in place during the life of the project.

#### **Erection of Protective Barriers in Summerhill Drive**

The barriers are to continue into Summerhill Drive to protect the grass verge where the trees are located from vehicles which are liable to cause damage when parking close to the site. Fencing to remain in place during the life of the project and be constructed in the same manner as above.

#### **Access into Construction Exclusion Zone**

If access is necessary, this should be temporary and will need permission from the Local Planning Authority, site agent will also inform the Tree Consultant who may need to be present along with the Council's agent. Barriers to remain in place until the end of the post construction landscaping phase.

#### **Ground Protection:**

Ground protection is not required for the trees unless soil levels above the root protection areas are exposed during demolition. If this is the case protective fencing needs to be erected immediately with a geotextile membrane laid within the CEZ and covered with a 50mm layer of mulch which will act as a weed suppressant to allow air and water to pass into the soil of the root protection area and reduce compaction to protect soil structure (see appendix 6).

#### **Demolition:**

##### **Roof area overlapped by canopy**

Demolition begins at roof top level with the operative working on boards, or ladders as scaffolding should not be necessary. (health and safety precautions should be taken to comply with current law and regulations). The removal of roofing materials proceeds the dismantling of walls which is the normal order of work in demolition.

Dismantling within the roof area overlapped by canopies should proceed by hand (this is normal practice as it involves the salvage of roofing materials).

The initial stages should be under the supervision of the Tree consultant who will notify the local planning department in advance when demolition is to take place. Removal of timber roofing battens and joists should also be by hand in the areas where the tree canopies overlap.

### **Supporting walls**

The demolition process will be conducted in a way which guarantees that the walls are dismantled by removing masonry away from the trees, working within the building's footprint, initially demolishing by hand until mechanical activity can continue clear of the canopy and rootzone, beginning with the west elevation.

The removal of the walls can be conducted at floor level. The demolition should commence with the West façade with walling removed immediately out of the footprint moving in the direction of the arrows on the TP Plan (TP/243/FL). Once the existing construction levels are reached no excavation should be carried out below the existing soil surface with geotextile material and mulch laid before protective fencing. Tree protection barriers are to be erected immediately once the site has been made safe as outlined by the dotted line on TP Plan (TP/243/FL) Barriers are as shown on the plan and detailed in appendix 6).

The demolition process must proceed with care in a planned, measured and controlled fashion. The existing walls if removed carefully will not impact or cause harm the trees.

### **Machinery:**

Machinery must **not** be operated inside the root protection area. (If machinery is used then this should be under supervision and will warrant a visit by the Tree Consultant/LPA) who will agree to the areas where machinery can be used.

### **Flooring and erection of tree protection**

#### **Concrete floors:**

Flooring should remain intact throughout the demolition process where possible to prevent damage to the root protection zone. If it is not possible to retain flooring once the main structure has been removed, this can be removed by hand as described previously, followed by the laying of geotextile mulching and fencing off as previously described. Demolition within the RPAs of the retained trees must be to existing construction depths/earth level but not any deeper.

Concrete can be lifted gently with hand or light motorised tools to avoid or limit physical damage to the roots. If services or trenching need to be carried out once the concrete floors are lifted this will be by hand. An air spade may be used to determine the position of roots.

Fencing has been discussed above.

### **Removing masonry and hardcore**

All demolition materials will be demolished into the existing building footprint area and removed directly from site or temporarily to the designated storage areas (TP/243/FL), unless it is to be retained as hardcore to be used in the construction phase or for hardstanding. In the interim this material is to be stored within the garden area to the extreme southern end of the garden. A designated storage and handling area as well as access and egress route shown on TP/243/FL

Convey all demolition away from the trees' canopies and RPA's first in an easterly direction and then into the rear garden to waiting skips or lorries parked away from the protected areas as shown by the arrows on TP/243/FL.

### **Construction Phase**

During the construction of the two proposed dwellings potential for damage to the Norway Maples is low, providing protective fencing and CEZ are kept sacrosanct and storage and material handling is kept to the designated areas.

#### **Services:**

There is no indication that new services are to be installed. If this is the case hand trenching should be used where excavations are necessary. Approval must be sought where this is within the CEZ. Roots that are 25mm diameter or above are not to be severed unless authorised by the LPA/tree consultant. Services requiring cables or pipes will need to be threaded beneath roots, with the trenches backfilled immediately, to protect roots from drying out.

### **Post construction and Landscaping**

The hedge and its roots to be grubbed out during the demolition phase and site clearance, is retained until landscape works take place for site security.

By removing the hedge during the demolition phase, the stems and branches can be utilised to provide woodchip for use when mulching over the geotextile in the CEZ.

#### **Removal of tree protection barriers:**

Removal of tree protection barriers can take only take place after all site operations have ended, including post construction landscaping. LPA and tree consultant is to be informed prior to barriers being removed after consent given by the LPA.

#### **Post site inspection:**

An inspection of the condition of retained trees will be made to assess if any further tree works are required. Where the soil around any tree is found to be compacted appropriate remediation will be undertaken.

### **Site Inspections and Timings:**

#### **Prerequisite to inspections:**

A record of inspections should be compiled for the project, copies retained on site and forwarded to the Local Planning Authority.

#### **A minimum of eight site inspections:**

- 1.Pre-planning meeting
- 2.Commencement of demolition
- 3.During Demolition
- 4.Demolition: floor level
- 5.Erection of RPA barrier and CEZ

6. Commencement of construction phase

7. Post construction and final operations and landscaping

8. Removal of barriers.

#### AMS Contingency measures

Precautions to avoid injury or harm to trees, below and above ground.

Fires will not be lit within ten metres of the tree crowns of retained trees.

Soil levels in rooting areas will be retained, outlying areas can be raised to a maximum 300mm with surrounding areas graded down to existing ground level found in the root protection areas.

No concrete to be mixed either by hand or with machinery, or washing of tools and machinery within fifteen metres of remaining trees.

No chemicals or materials are to be stored or released within ten metres of the remaining trees for example: oil, petrochemicals, bitumen cement etc. Hazardous materials such as herbicides and pesticides are subject to COSHH regulations and stored safely away from the CEZ.

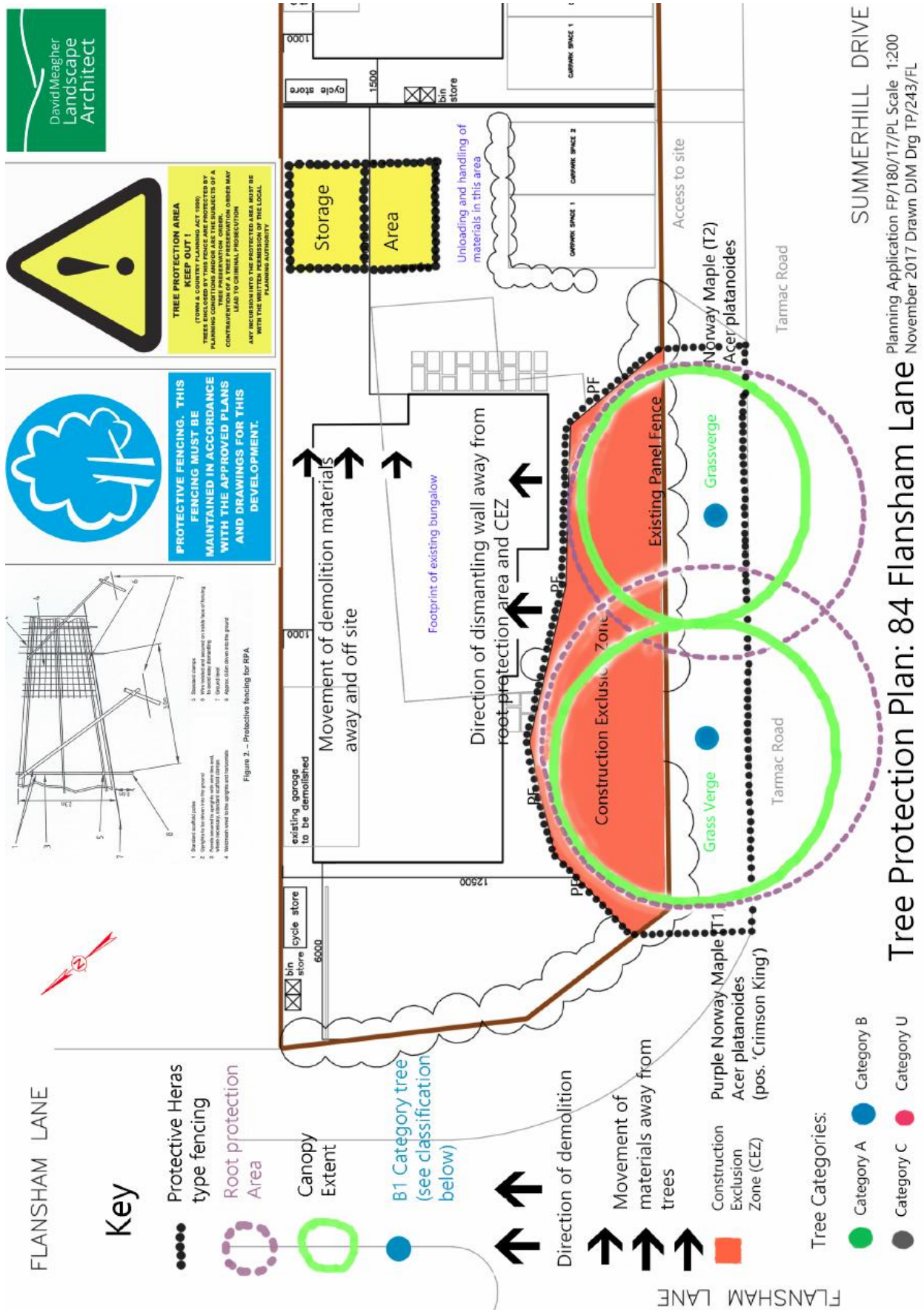
#### Accidents and spillages:

Accidents which can harm retained trees must be reported by the Site Agent

to the appointed tree consultant and LPA at the time of the incident. The consultant will visit the scene as soon as possible after being informed. The LPA will be notified, and the visit logged in the inspections log. Any recommendations or remedial work will be submitted to the LPA both orally and in writing for approval. If the trees are in a dangerous condition the appointed tree consultant will request LPA intervention and a visit to make the scene safe. Examples: accidents such spillage or release of discharge of toxins and waste of fuel, chemicals contaminated water within or adjacent to the RPA's, or unauthorised physical damage to the limbs, roots or trunk of trees.

NB. A tree that is damaged because of the site development and is under the protection of a Tree Preservation Order is subject to legal proceedings by the local authority.

16.0 Tree Protection plan (see also stand alone copy) FP/180/17/PL



## 17.0 Site Photographs:



Above: T1 & T2 Norway Maple Subject Trees

Below: Entrance to Summerhill Drive



Above: Unsympathetic tree surgery work

Below: Hedge to be removed

