Arborist Associates Ltd.

An Arboricultural Assessment of the Tree and Hedge Vegetation on Lands for Development at 'Stoney Hill Road', Rathcoole, Co. Dublin.

Prepared for: Romeville Developments Ltd.

Prepared by: Felim Sheridan F. Arbor. A, RFS Dip, Nat. Dip & NCH in Arboriculture

Date: 28th July 2022

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1.0 Instructions

1.1 I have been instructed by Romeville Developments Ltd. (planning applicant) to assess the tree and hedge vegetation on the site area on 'Stoney Hill Road' Rathcoole, Co. Dublin and to report on the following:

A - To assess the present condition of the tree and hedge vegetation within this site area. See 'Appendix 2' and drawing No.RCP001 for detail of my findings.

B: To assess the impact of the proposed development layout on the tree and hedge vegetation indicating on a drawing those for removal and retention. See 'Section 5' of our report and drawing No.RCP002 for detail.

C: To show on this drawing the line of protective fencing to be erected around the vegetation being retained along with other mitigation measures to aid in their successful retention. See 'Section 6.0' or our report and drawing 'No.RCP002' for detail.

2.0 Report Limitations

2.1 The inspection has been carried out from ground level only and is a preliminary report. It does not include climbing inspections or below ground investigations. Should a more detailed inspection be thought necessary on any tree/s, then this will be highlighted within my recommendations.

2.2 The assessment is based on what was visible at the time and recommendations made are subject to the knowledge and expertise of the qualified Arboriculturist that carried out the above inspections.

2.3 Trees should be inspected on a regular basis as their health and condition can change rapidly due to biotic and abiotic agents. The recommendations within this report are valid for a 12-month period only and this may be reduced in the case of any change in conditions to or in the proximity of the trees.

2.4 Before undertaking any work to these trees, it would be advisable to check whether there is any planning or tree preservation controls are in operation, if they are it will be necessary to obtain consent before undertaking any works (pruning or felling).

3.0 Aims and Report Brief

3.1 Arborist Associates Ltd. has been commissioned to provide a condition assessment of the existing tree and hedge vegetation on this site area, to prepare an arboricultural implication study and to recommend tree protective measures for the tree and hedge vegetation for retention within the proposed development.

3.2 The Arboricultural data which is presented within the attached tree schedule (see Appendix 2), has been recorded in line with BS 5837:2012. The tree survey was conducted by collecting and assessing the following information on all significant trees located on site and plotted onto the land survey map provided.

- Tree Number (metal tags attached to each tree).
- Tree species both common and botanical.
- Dimensions (Trunk diameter, height, crown spread and crown clearance).
- Age Class
- Physiological Condition
- Structural Condition
- Preliminary Recommendations
- Estimated remaining contribution within their present environment
- Retention category

3.3 Their retention category has been assessed and categorised according to their quality and value within the existing context (BS-4.5), and not in conjunction with any proposed development plans. In making this assessment, particular consideration was given to;

- **Arboricultural Value** – Including health, structural form, life expectancy, species and its physical contribution to or affects on other features located on site.
- **Landscape Value** – An assessment of a trees locality including its contributions to other features as well as to the site as a whole.
- **Cultural Value** – Additional contributions made such as conservation, historical, commemorative value.

3.4 The trees have been divided into one of the following categories, in accordance with the cascade chart illustrated in table 1 of BS 5837:2012. The classification process begins by determining whether the tree falls within the (U) category, if not then the process will continue by assuming that all trees are considered according to the criteria for inclusion in the high category (A). Trees that do not meet these strict criteria will then be considered in light of the criteria for inclusion in the moderate category (B) and failing this, they will be allocated a low category (C).

The following summarises each of the categories:

Category U – Those trees in such a condition that any existing value would be lost within 10 years. Most of these will be recommended for removal for reasons of sound Arboricultural Practice/ Management.

Any category 'U' trees within the survey area have been identified on our drawings (Nos.RCP001 & RCP002) with a 'Red' donut around their trunk positions. Due to the condition of these trees, they should not be considered a constraint on the design layout of the proposed development of this site area.

Category A - Trees of high quality/value with a minimum of 40 years life expectancy.

From our assessment of the Tree & Hedge vegetation on this site area, none was allocated a Category 'A' grade.

Category B – Trees of moderate quality/value with a minimum of 20 years life expectancy. These trees would be seen as having the potential to contribute to the tree cover of these grounds for the medium-term.

Any category 'B' trees within the survey areas have been identified on our drawings (Nos.RCP001 & RCP002) with a 'Blue' donut around their trunk positions.

Category C – Trees of low quality/value with a minimum of 10 years life Expectancy. These trees would be seen as having the potential to provide tree cover for the short to medium term and they should not be seen as a considerable constraint on the development of these lands. Where viable, they should be retained.

Any category 'C' trees within the survey area have been identified on our drawings (Nos.RCP001 & RCP002) with a 'Grey' donut around their trunk positions.

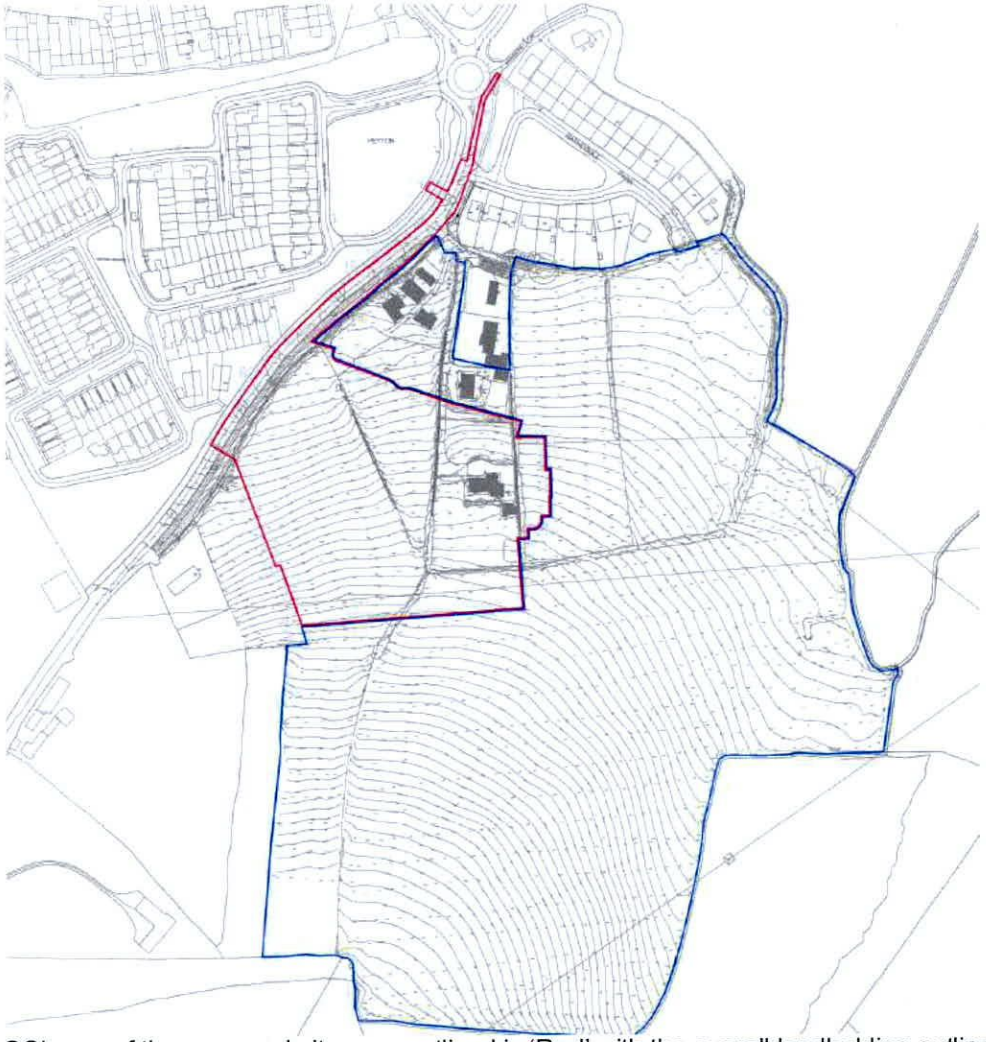
3.5 The trees have been plotted onto the attached drawing (DWG No.RCP001) by a land survey company and the tree reference numbers referred to in the condition tree report have been shown on this drawing along with their crown spreads and their retention category colour coded as detailed above and recommended by BS 5837 2012.

The constraints for each tree were worked out as per the formulas in BS5837 2012 and have been shown on this drawing using an 'Orange Circle' to aid the design team in their final development layout to ensure tree vegetation proposed for retention is retained successfully. The Root Protection Area (RPA) is the minimum area around individual trees to be protected from disturbance during construction works and is expressed as a radius in meters measured from the tree stem. Any deviation in the RPA from the original circular plot takes account of the following factors whilst still providing adequate protection for the root system:

a) The morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures, open drainage ditches and underground apparatus);
b) Topography and drainage;
c) The soil type and structure;
d) The likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

4.0 Summary of Survey Findings

4.1 The proposed development site ('subject land') forms part of the entire residential zoned landholding for a 204 housing scheme, with associated infrastructure and facilities, that was granted planning permission through the Strategic Housing Development (SHD) process by An Bord Pleanála (ABP) on 12th November 2020 (Ref. ABP-307698-20).



OSI map of the proposed site area outlined in 'Red' with the overall landholding outlined in 'Blue'.

4.2 This site area is made up of lands in agricultural use managed in grass land for grazing, and a single residential property with formal garden areas to its front and rear.

4.3 The site area is bounded to the north by residential properties, to its west by 'Stoney Hill Road' and to its south and east by lands in agricultural use. Typical agricultural type hedgerows for this area form the boundaries between the fields

and or around the boundaries of the private residence. Most of these hedgerows have not received much maintenance in recent years and have been allowed to grow out wide with scrub species such as Bramble encroaching out. In some areas, the quality of the hedges has also been affected due to this lapsed management and grazing livestock.

4.4 Within the formal grounds around the residential property within this site area, there are areas maintained in lawns with a small number of ornamental trees, shrub borders and hedges. The grounds of the residential property are being maintained with regular maintenance.

4.5 Within the survey area, 6No.Trees have been tagged individually with only one of these trees within the red line boundary around this site area and 5No. Hedges and 3No. Shrub Borders have been identified numerically.

The following table gives a breakdown of the category grading allocation as per the cascade chart in BS5837 2012:

Category Grade	No. of Trees
Category U **2 Trees**	**Tree Nos.**0850 & 0851
Category A **0 Trees**	**--**
Category B **1 Tree**	**Tree No.** 0852
Category C **3 Trees +** 5 Hedges + 3 Shrub Borders	**Tree Nos.** 0849, 0853, 0863. **Hedge Nos.** 1, 2, 3, 4 & 5, **Shrub Borders Nos.** 1, 2 & 3
Total	**6 Trees + 5 Hedges + 3 Shrub Borders.**

5.0 Arboricultural Impact Assessment

5.1 **Development Description**

The proposed development site ('subject land') forms part of the entire residential zoned landholding for a 204 housing scheme, with associated infrastructure and facilities, that was granted planning permission through the Strategic Housing Development (SHD) process by An Bord Pleanála (ABP) on 12th November 2020 (Ref. ABP-307698-20).

The proposed development within this planning application comprises of the demolition of 1 no. residential property and 1 no. ancillary outbuilding and will consist of the construction of a residential development of 42 no. dwellings on a site area of 2.90 hectares. The proposed dwellings will comprise of 2 no. typologies (Typology F and Typology L). Typology F will comprise of 21 no. dwellings and Typology L will comprise of 21 no. dwellings. The proposed 42 no. dwellings will comprise of 42 no. 3 bed units, in a mix of terraced typology. Typology L are two storey, with rear light tunnels, and typology F are two storey, plus second floor loft accommodation with front dormer windows and rear roof lights and rear roof light tunnels.

The proposed development also includes 84 no. in curtilage surface car parking spaces, circa 3,281 sqm usable public open spaces (include proposed play equipment), a parkland to the south of the site, private domestic gardens, a new vehicular entrance from Stoney Hill Road, an internal road network, including footpaths / cycle ways, 3 no. refuse/bin stores, public lighting, landscaping, boundary treatments, drainage and engineering works and all other associated and ancillary development / works. The total proposed residential development gross floor space in phase 1 is circa: 5,662 sqm.

5.2 On drawing No.RCP002, I have shown the tree and hedge vegetation for removal due to the proposed development and condition/management with 'Red Hatched' crown spreads and those to be retained with a 'Green Hatched' crown spread.

5.3 On this drawing (No.RCP002), I have also shown the position of any necessary tree protection measures in order to protect the root zone of the vegetation being retained within the vicinity of where the construction works will occur. These work exclusion zones are shown on this drawing using 'Orange Hatching' and these areas will need to be cordoned off by the erection of fencing or other means at the start of the works and this will need to be maintained in place until all works are completed. This fencing is to protect the root zones of the tree and vegetation and to ensure their successful integration into the development of this site area.

5.4 The comments made within this impact assessment study are based on my understanding of the proposed development and what is required to allow for its construction.

5.5.0 Design Rational

5.5.1 A collaborative approach has been adopted by the design team with regard to the development of the proposed scheme including the protection and reinforcement of the site's 'Green Infrastructure' which is in line with the County Development Plan's G2 Objective 5 and G6 Objective 1 which notes *'to protect and enhance existing ecological features including tree stands, woodlands, hedgerows and watercourses in all new developments as an essential part of the design process'.*

5.5.2 The objective of the site layout is to retain as much of the tree and hedgerow vegetation as possible within the site layout, in particular around the perimeter of the site to create a strong and reinforced boundary to the scheme, to improve linkages of the green infrastructure and to ensure connectivity of habitats within the surrounding countryside.

5.5.3 Given the sloping nature of the site in a north-south direction, along with the fact that access off 'Stoney Hill Road' is restricted to key 'entry' points due to levels constraints, an east-west arrangement of road networks through the scheme is considered to be the most appropriate design layout. The existing network of hedgerows on this site area run largely in a north-south direction and it is considered inevitable; in order to provide any form of logical residential development on the site, that the central portion of hedgerows within the core of the site area will need to be removed.

5.5.4 As part of the design team assessment of hedgerow retention, a full and detailed exercise was carried out to assess if any parts of these central hedgerows could be incorporated into the open spaces and based on this assessment, it was concluded that in a lot of instances due to the sloping nature of the site and the necessary finished levels of the proposed development, that it was not feasible or practical to retain these small fragmented sections of hedgerow. Their retention would require sizable retaining wall elements which would impact on the open spaces which would be difficult to absorb into the new landscape setting as well as impeding pedestrian flow and adding to maintenance difficulties in the long-term.

5.6.0 Impact

5.6.1 To facilitate the proposed development in this planning application, it will be necessary to remove the following tree and hedge vegetation from this site area:

Category U	**Tree Nos.** --
Category B	**Tree Nos.**--
Category C	**Tree No.** 0863 **Hedge No.1B**– c.36m (made up of a c14m section at northern end and c.22m section at the southern end). **Hedge No.**2A – c.90m **Hedge No.4** – c.44m. **Hedge No.5** – c.11m **Shrub Border Nos. 1, 2 & 3**

5.6.2 **So in summary**, 1No.of the individually tagged trees included within this assessment area along with c.181m from the c.424m of hedging that falls within this site areas red line boundary along with three small shrub borders are required to be removed to facilitate the proposed development works.

The loss of the above tree and hedge vegetation is to be militated against within the landscaping of this completed development with the use of trees, shrubs, herbaceous plants, bulbs and hedging. See project landscape architects plans and schedules for detail on this replanting.

The following is a list of some of the main elements of these mitigation measures:

- The planting of native hedgerows linking to outward boundary hedgerows.
- Infilling and augmenting of existing hedgerows.
- Developing new compensatory 'native' woodlands where space allows and merging them with the existing hedgerows.
- Planting of semi-mature trees, with many flowering varieties which are beneficial for pollinators.
- Planting diverse meadow mixes, including naturalized bulb planting and managing key grass area zones as meadows in particular along the linear park to the south.
- As part of the hedgerow removal works, topsoil from the hedge banks are to be salvaged and stored separately. This material shall be reused in the forming of berms for the new native hedgerows.
- Inclusion of bat boxes to encourage nesting as recommended within the 'Bat Survey' prepared by the project ecologist.

This planting as part of the landscaping will complement the development and its incorporation into the surrounding area. It will also help to provide good quality and sustainable long-term tree cover and as it establishes and grows in size, it will be continuously mitigating any negative impacts created with the loss of the existing hedgerow vegetation to facilitate the proposed development. This planting will also help strengthen the existing field network of hedgerows and will help to ensure good connectivity through the finished landscaped development. See landscape architects drawings and schedules for detail.

5.7.0 Tree Retention

5.7.1 The remaining tree & hedge vegetation shown with 'Hatched Green' crown spreads are proposed for retention and incorporation into this completed development. This will involve some trimming/maintenance works to deal with structural issues and to create a satisfactory juxtaposition within the completed development. A preliminary list of these works is included within the condition assessment within 'Appendix 2' of this report and this will need to be reviewed on site once the development is laid out to include any other additional works required.

5.7.2 The hedges being retained are to be incorporated into the completed landscaped development. This will involve tidying up the vegetation and cutting them back to facilitate boundary treatment works and to create tidier hedges. Poor quality or weak sections of hedging can be augmented with native hedge planting in order to bulk them up and to create good structured hedges for the long-term.

5.7.3 For the tree and hedge vegetation being retained, it will be important to retain the existing ground levels around them and to incorporate them into the surrounding landscaped development. All excavations or raising of ground levels to achieve this will need to be planned to be located outside the root zone of the trees.

5.7.4 To minimize impact during the construction works, protective fencing and other mitigation measures will need to be put in place at the start of the works and will need to be maintained until all works are complete. See drawing No.RCP002 for detail and position of fencing.

5.7.5 Main items for consideration during the proposed construction process:

Item	Comments
Tree Pruning	As part of the initiating works, the crowns of some of the trees being retained are to be pruned to clean out dead/unstable growth, the pruning of individual limbs/branches or entire crowns to reduce size due to structural weaknesses or to improve their juxtaposition within the built environment. A preliminary list of these works is given within the condition tree assessment in 'Appendix 2' of this report and these are to be reviewed on site prior to being carried out. The hedges being retained in most instances will require trimming, particularly of their sides to contain their width and encroachment out onto the surrounding areas and to better incorporate them into the completed landscaped area. All tree felling and pruning works need to be carried out by qualified and experienced tree surgeons *before* any construction work commences; all tree work should be in accordance with *BS3998 (2010) Tree Work – Recommendations.* All trees for removal will need to be felled to stumps and all stumps in particular those which are located within the root zone of trees being retained are to be ground out using a mechanical stump grinder taking care not to cause root damage to the trees being retained.
Tree Protection	Tree and hedge vegetation being retained will need to be protected from unnecessary damage during the construction process by effective construction-proof barriers that will define the limits for machinery drivers and other construction staff. Ground protected by the fencing will be known as the 'Work Exclusion Zone' and sturdy protective fencing will need to be erected along the points identified in the Tree Protection Plan (Dwg No.RCP002) **prior** to any soil disturbance and excavation work starting on site. This is essential to prevent any root or branch damage to the vegetation being retained. The British Standard BS5837: *Trees in relation to design, demolition and construction (2012)* specifies appropriate fencing, see 'Appendix 1' for details. All weather notices should be erected on the fences with words such as: "Tree Protection Fence — Keep Out". When the fencing has been erected, the construction work can commence. The fencing should be inspected on a regular basis during the duration of the construction process and shall remain

Item	Comments
	in place until heavy building and landscaping work have finished and its removal is authorised by the project Arboriculturist.
Construction	It will be important that good housekeeping is in place at all times so that the site does not become congested. All construction works are to be well planned in advance so as not to put pressure on the protective zone around the trees. All works are to occur from outside the protective zones. Where work space between the building lines and the protective fence lines is limited/ restricted, alternative work methods will need to be looked at so as to keep the work areas to their minimum in order to reduce the extent of soil and root damage occurring to the trees proposed for retention. See section 6.2.3 of BS5837 2012 for detail on working within the RPA and ground protection. For light access works within the work exclusion zone, the installation of suitable ground protection in the form of scaffold boards, woodchip mulch or specialist ground protection mats/plates may be acceptable. These are to be reviewed with the project Arboriculturist and installed to their recommendations. See detail in 'Appendix 1' of this report for sample. Care should be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible. Materials, which can contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, should not be discharged within 10m of a tree stem. Fires should not be lit in a position where their flames can extend to within 5m of foliage, branches or trunk. This will depend on the size of the fire and the wind direction. Notice boards, wires and such like should not be attached to any trees. Site offices, materials storage and contractor parking should all be outside the work exclusion zone.
Services	See project engineer's drawings for detail for service routes. Prior to the installation of any services routed near trees or hedges, they are to be marked out on site for review by the project Arboriculturist and a detailed method statement is to be prepared by the installation contractor in conjunction with the project Arboriculturist on how these services are to be installed while providing protection to the tree vegetation shown for retention.

Item	Comments
Boundary Treatments	It is my understanding that all boundary treatments where required along by the tree vegetation being retained are to be of a fence type structure where there will only be a need to excavate small diameter holes for the fence uprights and these will need to be dug manually or with an augur with no machinery allowed to operate within the work exclusion zones fenced off by the tree protection fencing. The working ground area required during these works will need to be protected from impacts/damage by a suitable ground protection such as scaffold planks laid butt jointed on a bed of woodchip in accordance with Section 6.2.3 of BS5837 2012.
Landscaping	The existing ground levels within the RPA of the trees are to be retained and incorporated into the finished landscaped development. Where changes in levels occur, these are to be either graded into the finished levels starting outside the RPA or alternatively, retaining wall structures are to be used differentiating between the different levels. All soft and hard landscaping within the RPA of the trees to be retained are to be carried out manually and the soil levels are not to be lowered or raised resulting in root damage to the trees. All surfaces are to be porous to allow the free movement of air and moisture to the roots below. Recommendations of sections 8 of BS5837 2012 are to be adhered to during the landscaping within the RPA's of these trees.

5.8.0 Monitoring

5.8.1 Any construction works within close proximity to retained trees are advised to be undertaken in accordance with approved method statements prepared by the construction contractor under the direct supervision of a qualified consultant Arboriculturist. Therefore, during the construction works, a professionally qualified Arboriculturist is recommended to be retained by the principal contractor or site manager to monitor and advice on any works within the RPA of retained trees to ensure successful tree retention and planning compliance.

5.8.2 It is advised that tree protection fencing, any required special engineering and supervision works must be included in the main tender documents, including responsibility for the installation, cost and maintenance of tree protection measures throughout all construction phases.

5.8.3 Copies of the tree retention and protection plan (Dwg No. RCP002) a copy of BS 5837(2012) and NJUG 4 (2007) should all be kept available on site during the construction works and all works are to be in accordance with these documents.

5.8.4 On the completion of the construction works, all trees retained are to be reviewed by the project Arboriculturist and any necessary remedial tree surgery works required to promote the health of the trees and safety are to be implemented.

6.0 Arboricultural Method Statement/Tree Protection Strategy

6.1 The objective of this arboricultural method statement/tree protection strategy is to provide information for the main building contractor/site manager on how trees need to be protected during a construction project and so that they can prepare their own site specific detailed method statement for their works.

6.2 It is necessary for tree protective fencing to be erected and all other mitigation measures required to be put in place prior to the development works commencing on site and these are to enclose and protect the root zone of the tree vegetation proposed for retention. See drawing 'Dwg No.RCP002', for the position of the protective fencing and other mitigation measures.

6.3 The protection of the tree vegetation shown for retention is divided into three main sections starting with the preconstruction stage right through to post construction and the reassessment of the retained trees.

Stage 1:

6.4.0 Pre-Construction Works

6.4.1 Prior to the main construction works commencing on site the following needs to be planned:

1. The developer or main contractor needs to appoint an Arboriculturist for the duration of the project. The Arboriculturist is to make regular site visits to ensure that the tree protection measures are in place and adhered to.
2. The main contractors and all sub-contractors work force are to be briefed on the tree protection and ensure that these measures are to be kept in place throughout the construction period.
3. All personnel are to adhere to the recommendations of the appointed Arboriculturist.
4. Any issues in relation to the trees shown for retention must be discussed with the appointed project Arboriculturist and the necessary mitigation measures put in place without delay and prior to the works being carried out.

6.5.0 Site meeting

6.5.1 Prior to any works commencing on site, it is necessary that a meeting be arranged between the project manager, site foremen, the project Arboriculturist and local authority to identify and finalize the trees for removal and the line of the protective fencing.

6.6.0 Tree works

6.6.1 The developer or the main contractor is to appoint a tree surgery company competent of carrying out the remedial tree surgery works and tree felling that are required on this site. The tree surgery contractor is to produce a method statement detailing how he plans to undertake the works and informing the site foreman of the process so the necessary steps can be taken to ensure the works are carried out safely and efficiently. The works are to be carried out by appropriately trained personnel taking account of the recommendations of BS3998 2010.

6.6.2 **Tree removal -** Trees for removal are to be identified by the project Arboriculturist and the method of removing the stumps is to be carried out to the recommendations of the project Arboriculturist. The trees in the way of the works are to be removed in such a manner not to cause damage to those being retained. Where necessary to avoid damage to the trees to be retained, these are to be removed in sections by a tree surgeon (Arborist). Where necessary, the roots and stumps are to be dug out with a digger except where the stumps are located within the RPA (root protection area) of trees being retained. In this instance, the stumps are to be ground out with a mechanical stump grinder taking care not to cause damage to the roots of trees being retained.

6.6.3 **Remedial tree surgery works -** The necessary remedial tree surgery works required to promote health and safety of the trees to be retained is to be carried out. A schedule of these works is to be produced by the project Arboriculturist taking into consideration the trees within their new built environment and prior to these works being carried out; they are to be agreed with the local authority.

6.7.0 Erection of the protective fencing

6.7.1 Once the trees have been removed, the line of the protective fencing that is required around the trees being retained **must be** erected as per 'Dwg. No. RCP002'.

6.7.2 The fencing needs to be 2.3m high and constructed in accordance with figure 2 of BS 5837 2012 (see fencing detail on drawing 'No.RCP002 & Appendix 1) using vertical and horizontal scaffold bars well braced together with the verticals spaced out at a maximum of 3m centres. Onto this, weld mesh panels are to be securely fixed with wire or scaffold clamps.

6.7.3 Signs need to be attached to these fences warning people to 'keep out'. (See detail within drawing No.RCP002 & Appendix 1).

6.7.4 Once the protective fence line is erected, then the main construction works can commence on site.

6.7.5 **Storage of Material, Work Yards and staff car parking -** These areas must be identified on the work drawings prior to the construction works starting. These must be positioned outside the root protection areas around the trees being retained.

Stage 2:

6.8.0 The Construction Works Stage

6.8.1 **Protective fencing -** During the course of the works, special attention must be paid to ensure that these tree protection measures are kept in place, in good order and remain upright, rigid and complete at all times. They must be checked daily by the main contractor/foreman and any damage noted must be fixed immediately.

If works need to take place inside the protective fence lines, then the project Arboriculturist must be informed in advance of the works taking place and the mitigation measures required to reduce impact on the tree vegetation agreed. These mitigation measures will include the supervisions of these works by the project Arboriculturist.

The protective fencing and all other protection measures are to remain in place throughout the construction works phase and must only be removed when all the works are complete and at this stage incorporated into the finished landscape.

6.8.2 **Excavations -** The excavation works are only to commence once the protective fence line and all other protection measures are in place.

The excavations in the vicinity of the tree vegetation being retained will need to be viewed on site once marked out with the project manager, site foreman and the project Arboriculturist in advance of excavation to determine the extent of the impact and the work space required to allow for the construction works to proceed and to assess what additional mitigation measures will be required to protect those trees to be retained. In certain areas, it may be necessary to use an alternative method of excavating to prevent encroachment into the RPA of the trees to be retained and this may include such methods as retaining walls or similar.

No roots are to be severed by the construction works without prior approval by the project Arboriculturist. Where roots are encountered, the project Arboriculturist is to assess these prior to cutting and these are to be pruned back to appropriate pruning points beyond the excavation line. Where roots cannot be cut; alternative methods of construction will need to be considered. The excavated face is then to be covered with soil or with Hessian sacking to prevent further drying out and the death of root material. Where the Hessian sacking is used, it will be necessary to keep this moist especially during dry periods.

6.8.3 **Working within the RPA** *(Root Protection Area)* – If it becomes necessary to carry out works within the RPA of a tree/trees, these must be discussed and agreed with the project Arboriculturist. All works must be carried out manually. Root pruning is to be undertaken by an Arboriculturist using proprietary cutting tools such as a secateurs or hand pruning saw.

The ground within the RPA of the trees must be protected from damage as per the recommendations of **section 6.2.3** of BS5837 2012. See detail within appendix 1 on ground protection using boarding for pedestrian loading.

6.8.4 **Finished ground levels/Landscaping -** The existing ground levels within the RPA of trees must be retained and incorporated into the finished landscaped development. Where changes in levels occur, these are to be either graded into the finished levels starting outside the RPA or alternatively, retaining wall structures are to be used differentiating between the different levels.

All soft and hard landscaping within the RPA of the trees to be retained must be carried out manually and the soil levels must not be lowered or raised resulting in root damage to the trees. All surfaces are to be porous to allow the free movement of air and moisture to the roots below. Recommendations of sections 8 of BS5837 2012 must be adhered to during the landscaping within the RPA of the trees being retained.

6.9.0 Other items

6.9.1 The following is a list of additional activities ***that are not allowed*** within the RPA or within the vicinity of the trees being retained.

1 - Storage of equipment, fuel, construction material, or the stockpiling of soil or rubble.
2 - Burning rubbish
3 -The washing of machinery
4 - Attaching notice boards, cables or other services to any part of the tree.
5 - Using neighbouring trees as anchor points.
6 - Care is required when using machinery such as Tele-porters, cranes or other equipment close to trees so as not to damage the crown or any other parts.

Stage 3:

6.10.0 Post Construction Works

6.10.1 This project is not to be considered complete until all retained trees have been re-examined by the project Arboriculturist and the remedial works necessary to ensure the health of the trees and the immediate safety of the end user of this development are implemented.

This report has been produced as part of a planning application for this site area and is for the sole use of the above named client and refers to only those trees and hedgerows identified within. Its use by any other person(s) in attempting to apply its contents for any other purpose renders the report invalid for that purpose.

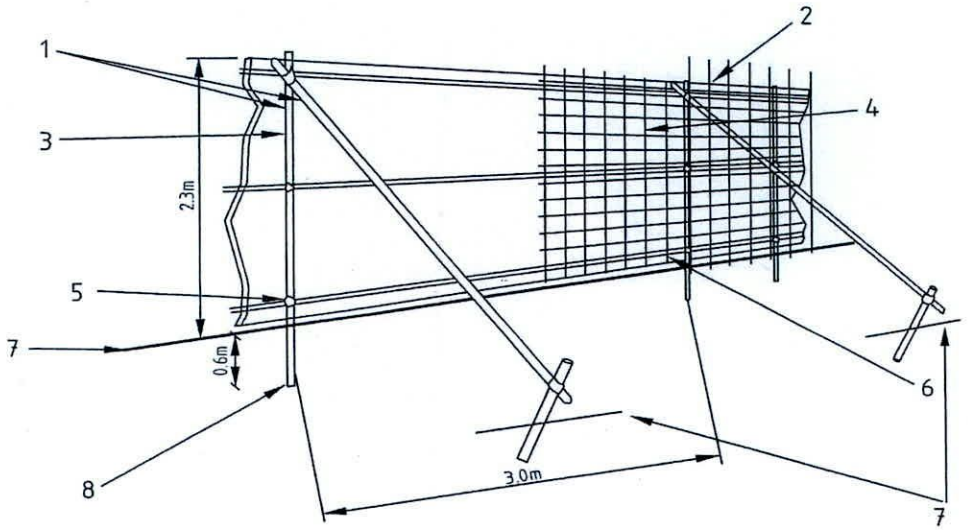
Signed Felim Sheridan Date 28/08/2022

Felim Sheridan
F. Arbor. A, RFS Dip, Nat. Dip & NCH in Arboriculture

Felim Sheridan's qualifications:
Fellow of the Arboricultural Association (F. Arbor. A), Professional diploma Arboriculture (RFS), National diploma Arboriculture (ND) and National certificate Horticulture (NCH).

Appendix 1

Sample of Temporary Tree Protection Fencing Detail.



1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and, where necessary, standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6m driven into the ground

Figure 2. – Protective fencing for RPA

Sample of signage to be placed on fence pannels.

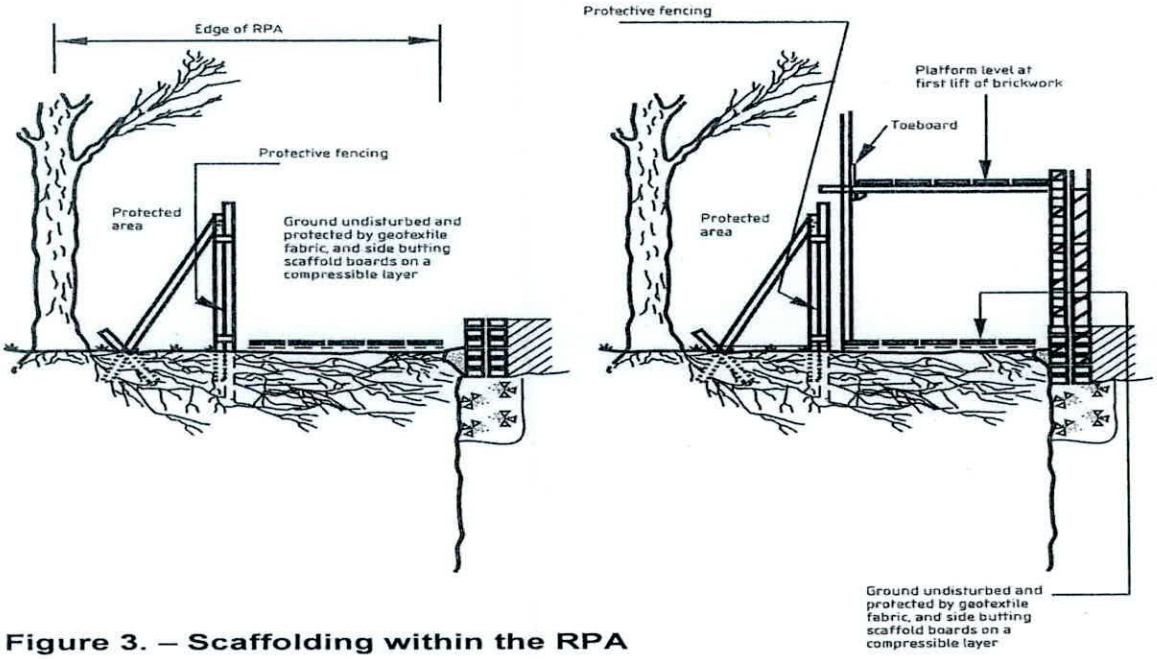
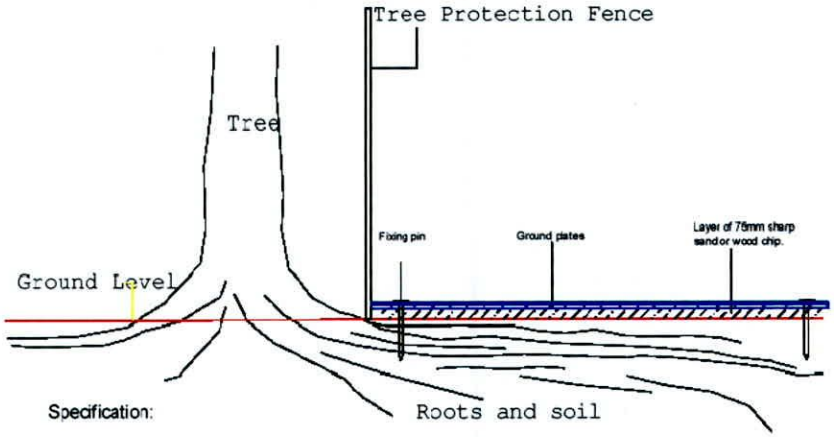


Figure 3. – Scaffolding within the RPA



Specification:

1. Lay min. 75m depth of sharp sand/wood chip over identified ground area
2. Lay side-butting scaffold boards/15mm poly propylene road plate over sand/wood chip
3. Fix ground protection cover into place with pins/pegs

Appendix 2

Condition Tree Assessment.

Of the Tree and Hedge Vegetation on the Site Area at 'Stoney Hill Road', Rathcoole, Co. Dublin.

Date: 23rd June 2022 (Revised Site Area)

Survey Notes

All codes referred to in this report are approximate and serve as a general guide only.

Reference to Numbers: The trees have metal tags attached and these correspond with the numbers in this report.

Reference to age class is as follows:

Young:	A tree which has been planted in the last 10 years.
Semi Mature:	A tree that is less than 1/3 the expected height of the species in question.
Early Mature:	A tree, which is between a 1/3 and 2/3's the expected height of the species in question.
Mature:	A tree that has reached the expected height of the species in question, but still increasing in size.
Over Mature:	A tree at the end of its life cycle and the crown is starting to break up and decrease in size.

Reference to Physiological, Structural Condition and other comments:

Physiological Condition

Good: A tree with no major defects, but possibly including some small defects.
Fair: A tree with some minor defects such as bark Wounds, isolated decay pockets or structure affected due to overcrowding.
Poor: A tree with more serious defects such as extensive deadwood, decay or defective to the point of being dangerous.

Structural condition and other comments
This records noted visual defects and other information about the trees health and structure.

Estimated Remaining Contribution in years

This is based on an Arboricultural assessment of the tree and is estimated based of the findings noted at time. Trees still need to be reviewed on a regular basis, preferably annually.

Less than (<) 10 years remaining contribution
10 + years remaining contribution
20 + years remaining contribution
40 + years remaining contribution.

Retention Categories

The purpose of the tree categorization method is to identify the quality and value of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained should development occur.

It is carried out in accordance with section 4.5 (Tree Categorization Method) of BS 5837 2012.

Summary

Main categories

Category U – Those trees in such a condition that any existing value would be lost within 10Years. Most of these will be recommended for removal for reasons of sound Arboricultural practice.

Category A - Trees of high quality/value with a minimum of 40 years life expectancy.

Category B – Trees of moderate quality/value with a minimum of 20 year life expectancy.

Category C – Trees of low quality/value with a minimum of 10 years life expectancy

Sub categories

1 – Mainly Arboricultural Values
2 – Mainly Landscape values
3 - Mainly Cultural and conservation value

Note: Whilst 'C' category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation.

If a layout design places Category 'U' trees in an inaccessible location such that concerns over public safety are reduced to an acceptable level, it may be preferable or possible to defer the recommendation to fell.

The terms 'Group, woodland or tree line' is intended to identify trees that form cohesive Arboricultural features either aerodynamically (e.g. trees that provide companion shelter), visually (e.g. avenues or screens) or culturally including for biodiversity (e.g. parkland or wood pasture), in respect to each of the three subcategories.

Reference to Crown spread, Height and Trunk Diameter:
This gives **a guide** to the area taken up by the tree.
Trunk diameter is the diameter of the main trunk taken at a height of 1.5m and is recorded in millimetres (mm).
Height records the overall height of the tree and is given in meters (m).
Crown Spread records the extent of the branches normally in a north, south, east and west direction from the base of the tree and is given in meters (m).
Clear crown height records the distance between the ground and the first branch form the base of the tree and is given in meters (m)

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average,		
		A Condition Assessment of the tree vegetation on the site area at 'Stoney Hill Road'. Rathcoole, Co. Dublin.									
Hedge No.1A	**Hawthorn** *Crataegus monogyna* **Bramble** *Rubus fruticosus* **Dogrose** *Rosa canina* **Elder** *Sambucus nigra* **Cherry Plum** *Prunus cerasifera* **Ornamental Rose** *Rosa* **Ash** *Fraxinus excelsior* **Willow** *Salix Fragilis* **Sycamore** *Acer pseudoplatanus*	**It runs north- south along the boundary with 'Stoney Hill Road' and is located outside the sites red line boundary.** It is of a mature age class in fair condition physiologically and in fair/poor condition structurally. It consists of clumps of Hawthorn, Elder, Snowberry, Cherry Plum, Ornamental Rose with an understory of Bramble and Dogrose. There are Ash, Willow and Sycamore trees forming part of the upper canopy formation. It has been allowed to grow unmanaged for some time and has been allowed to grow up tall and is losing its lower vegetation which is impacting on its structure and visual appearance. Bramble and other hedge species are encroaching out creating a broader and untidy hedge.  Google maps street view A2m | - | A4m | - **The following trees are located within hedge No.1A.**							Remove large size dead/ unstable growth. Trim in all encroaching hedge species. It may benefit from a height reduction in some areas to help improve its stability.		C2

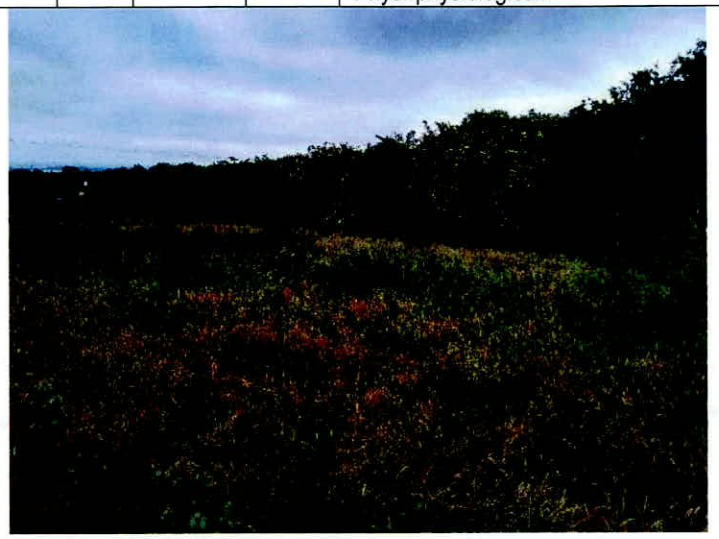
Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average,		
0849	**Ash** *Fraxinus excelsior*	9	180	4N 2S 1E 4W	1.8	Semi Mature	Fair/ Poor	Fair /Poor It forms part of a group canopy formation with a slightly asymmetrical crown as a result. Some trees have been removed on the east side and this has resulted in root damage which may have an impact on its health. Its crown is showing signs of dieback caused by 'Ash Dieback *(Hymenoscyphus Fraxineus)* disease'.	Prune lower branches in order to remove the broken hanging branch and to improve the shape/ balance of its crown. Monitor its condition, particularly for infection by 'Ash Dieback' and manage accordingly.	10+	C1
0850	**Ash** *Fraxinus excelsior*	8	170	3N 2S 2E 3W	2	Semi Mature	Poor	Poor It is heavily infected on the lower trunk by 'Bacteria Canker of Ash' leading to large size liaisons and areas of dead bark and this is having an impact on its health. It is also heavily infected by 'Ash Dieback Disease'.	I would recommend its **removal** as part of management.	<10	U
0851	**Crack Willow** *Salix fragilis*	14	460/ 330/ 240/ 500	7N 1S 5E 6W	3	Mature	Fair	Fair/ Poor It is multi-stemmed from base with an acute union formation between stems. The bulk of these stems lean out due to competition towards the road. This species is prone to limb failure. Heavy Ivy cover on the main trunk is extending up into its crown and is increasing its windsail.	I would recommend its **removal** as part of management due to structure and its proximity to the public road.	<10	U
0852	**Sycamore** *Acer pseudoplatanus*	13	260 x 7 Stems	5N 6S 6E 7W	2.5	Early Mature	Fair/ Good	Fair It is self-seeded into this area and is growing up around the out buildings. It is multi-stemmed from base and is growing up with Tree No. 0851 and forms part of the one group/ canopy formation. It has a reasonably symmetrical crown with heavy Ivy cover on the main stems beginning to extend up	Remove large size dead/ unstable growth. Cut Ivy at ground level and tidy up the area around its base.	20+	B1

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average,		
								into its crown. There is an acute union formation between some stems and this may lead to structural issues. It is suckering from base.			
0853	**Ash** *Fraxinus excelsior*	11	200 x 7 Stems	4N 3.5S 4E 3.5W	2	Early Mature	Fair	Fair/ Poor It is multi-stemmed from base and is possibly growing from an old coppiced stool within this hedge. There is a weak union formation between stems with included bark present creating structural weakness. Its crown is showing signs of infection by 'Ash Dieback Disease'. Heavy Ivy cover on the main trunk is extending up into its crown and is increasing its windsail.	Lighten end weight on heavy, exposed side limbs/ branches extending towards the road by c.1-2m. Cut Ivy at ground level and tidy up the area around its base and the undergrowth. Monitor its condition, particularly for infection by 'Ash Dieback' and manage accordingly.	10+	C1
Hedge No.1B	**Hawthorn** *Crataegus monogyna* **Blackthorn** *Prunus spinosa* **Bramble** *Rubus fruticosus* **Dogrose** *Rosa canina* **Elder** *Sambucus nigra*	**It extends southwards from Hedge No.1A along the sites boundary with 'Stoney Hill Road'.** It is of a mature age class in fair condition both physiologically and structurally. It consists of Hawthorn, Blackthorn, Bramble, Dogrose and Elder. It is growing on a hedgerow bank sloping down to the road. Some sections, in particular at the northern end where it adjoins Hedge No.1A have been impacted upon by the previous development works with soil and debris piled in on top of the hedge causing damage.							Make safe any large size dead/ unstable growth. Trim in encroaching hedge species and tidy up the undergrowth. Carry out infill planting to help bulk up this hedge.		C2

A2.5m	-	A4m	-

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average,		
		 Google Maps Street View									
Hedge No.2A	**Hawthorn** *Crataegus monogyna* **Blackthorn** *Prunus spinosa* **Bramble** *Rubus fruticosus* **Dogrose** *Rosa canina* **Elder** *Sambucus nigra*	**It extends in a north to south direction and forms an internal boundary within the site area between a field on the west side and private gardens on the east side.** It is a mature hedge in fair condition both physiologically and structurally. It consists of Hawthorn, Blackthorn, Elder, Bramble and Dogrose. Its height and side extending into the private property have been cut back previously and it has been allowed to grow more unmanaged on the field side with Bramble and other hedge species encroaching out in some places as a result. The overhead utility lines runs across the northern end of this hedge line. The previous cutting from the adjoining property side has helped to maintain a good stock proof quality, density and structure.							Carry out general tidying and trimming works and trim in encroaching hedge species.		C2

A4.5m	-	A2E/3.5W	-

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average,		
											
Hedge No.2B	**Hawthorn** *Crataegus monogyna* **Blackthorn** *Prunus spinosa* **Bramble** *Rubus fruticosus* **Dogrose** *Rosa canina* **Elder** *Sambucus nigra*	**It extends southwards from hedge No.2A and forms an internal boundary within the site area between two fields.** It is a mature hedge in fair condition both physiologically and structurally. It consists of Hawthorn, Blackthorn, Elder, Bramble and Dogrose. It has in the past been cut, but has since been allowed to grow up from this to its current size and form with Bramble and other hedge species encroaching out in some places as a result. Lower vegetation has also been impacted by livestock sheltering/grazing in this hedge.							Carry out general tidying and trimming works and trim in encroaching hedge species.		C2

A4.5m	-	A2E/3.5W	-

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average,		
											
Hedge No.3	**Hawthorn** *Crataegus monogyna* **Blackthorn** *Prunus spinosa* **Bramble** *Rubus fruticosus* **Dogrose** *Rosa canina* **Elder** *Sambucus nigra*	**It runs in an east to west direction at ninety degrees to Hedge No.2 and forms the boundary between the field to the south and the private residential property to the north, and forms part of a longer hedgerow and extends eastwards outside the site area.** It is of a mature age class in fair condition both physiologically and structurally. It consists of Hawthorn, Blackthorn and Elder with Bramble and Dogrose dominating the lower vegetation. A section of this hedge has been cut down to provide views. It has received some trimming from the adjoining private property side to the north in order to contain. Bramble is dominating some places, in particular at the western end. A3m - A4m -							It would benefit from general tidying works. Trim in encroaching hedge species.		C2

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average,		
											
Hedge No.4	**Hawthorn** *Crataegus monogyna* **Blackthorn** *Prunus spinosa* **Bramble** *Rubus fruticosus* **Dogrose** *Rosa canina* **Elder** *Sambucus nigra* **Horse Chestnut** *Aesculus hippocastanum*	**It runs at nightly degrees to hedge No.3 and runs in a north-south direction and forms the boundary between the field and the private residence to the west.** It is of a mature age class in fair condition both physiologically and structurally. It mainly consists of Hawthorn, Blackthorn and Elder with an undergrowth of Bramble and Dogrose. There is a sapling Horse Chestnut at one location which is beginning to establish over the height of this hedge. The hedge has received maintenance along the private residences side but has been allowed to grow wider and has encroached out on the field on the east side.								Trim in encroaching hedge species to contain width and make safe any large size dead/ unstable growth.		C2

A4m	-	A4m	-

<table>
<tr><th>Tree No.</th><th>Tree Species</th><th>Ht. (m)</th><th>Stem Dia. (mm)</th><th>Branch Spread (m)</th><th>C-Ht. (m)</th><th>Age Class</th><th>Phys. Con.</th><th>Structural Condition
Other Comments</th><th>Preliminary Recommendation</th><th>Remain Contribute in years</th><th>Cat. Grade</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>N-north S-south E-east W- west
Phys.-physiological.</td><td>A- average,</td><td></td><td></td></tr>
<tr><td>Shrub Border No.1</td><td>Mixed Ornamental Shrubs</td><td colspan="7">It separates the front paved area to the front of the house from the lawn area.
It was initially maintained as a formal shrub border but has been allowed to grow more unmanaged in recent times with some Bramble and other scrub species beginning to establish and to dominate in some places.
<table><tr><td>A2m</td><td>-</td><td>-</td><td>-</td></tr></table>  </td><td>It is in need of further maintenance/ management in order to contain.</td><td></td><td>C2</td></tr>
<tr><td>Shrub Border No.2</td><td>Mixed Ornamental Shrubs</td><td colspan="7">It cordons off the back lawn area from the front of the house.
It is becoming overgrown with the slower growing shrubs being suppressed out with scrub vegetation such as Bramble and weeds developing throughout. It is of some value for screening/ breaking up the view up the back garden and lawn area.
<table><tr><td>A5.5m</td><td>-</td><td>-</td><td>-</td></tr></table></td><td>It would benefit from general tidying works / trimming in order to contain.</td><td></td><td>C2</td></tr>
</table>

<table>
<tr><th>Tree No.</th><th>Tree Species</th><th>Ht. (m)</th><th>Stem Dia. (mm)</th><th>Branch Spread (m)</th><th>C-Ht. (m)</th><th>Age Class</th><th>Phys. Con.</th><th>Structural Condition
Other Comments</th><th>Preliminary Recommendation</th><th>Remain Contribute in years</th><th>Cat. Grade</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>N-north S-south E-east W- west
Phys.-physiological.</td><td>A- average,</td><td></td><td></td></tr>
<tr><td></td><td></td><td colspan="7">  </td><td></td><td></td></tr>
<tr><td>Shrub Border No.3</td><td>Mixed Ornamental Shrubs</td><td colspan="7">It extends along the back of the house and cordons off the lawn area from the back of the house. It consists of a mixture of ornamental shrubs and was initially formally maintained, but has since been allowed to grow up more unmanaged in recent times. There are some scrub species, in particular Bramble, developing throughout.

A4m | - | - | -

  </td><td>It would benefit from further general management.</td><td></td><td>C2</td></tr>
</table>

<table>
<tr><th>Tree No.</th><th>Tree Species</th><th>Ht. (m)</th><th>Stem Dia. (mm)</th><th>Branch Spread (m)</th><th>C-Ht. (m)</th><th>Age Class</th><th>Phys. Con.</th><th>Structural Condition
Other Comments</th><th>Preliminary Recommendation</th><th>Remain Contribute in years</th><th>Cat. Grade</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>N-north S-south E-east W- west
Phys.-physiological.</td><td>A- average,</td><td></td><td></td></tr>
<tr><td></td><td></td><td colspan="7">The following tree is located within shrub border No.3.</td><td></td><td></td></tr>
<tr><td>0863</td><td>Pittosporum
Pittosporum tenuifolium</td><td>9</td><td>100 x 8 Stems</td><td>2.5N
2.5S
2.5E
2.5W</td><td>0</td><td>Early Mature</td><td>Fair/ Good</td><td>Fair
Multiple-stemmed from base with a broad spreading crown. It forms part of the higher bulking within this shrub border.</td><td>Tidy up the area around its base.</td><td>10-20</td><td>C1</td></tr>
<tr><td>Hedge No. 5</td><td>Griselinia
Griselinia littoralis</td><td colspan="7">It runs at nightly degrees to Shrub Border No.3 and screens off the garage from the lawn area to the back of the house.
It is of a mature age class in fair condition physiologically and structurally. Its sides have been trimmed to contain spread, but it has been allowed to grow up tall and is becoming top- heavy and unbalanced.
<table><tr><td>A5m</td><td>-</td><td>A3m</td><td>-</td></tr></table>  </td><td>It is in need of further maintenance/management in order to contain. It would benefit from a height reduction to improve its balance and stability.</td><td></td><td>C2</td></tr>
</table>

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average,		
Fruit Orchard	**Apple** *Malus domestica* **Pear** *Pyrus communis* **Plum** *Prunus domestica* **(c.17 trees)**	**It is located within the south-eastern corner of the garden area of the private residence in the corner of Hedge Nos.3 & 4.** It is of a young age class in fair condition both physiologically and structurally. It consists of a mixture of Apples, Pears and Plums. They have been planted in recent times at c.3m between rows and at c.2.5m centres between each row and they are still attached to their tree ties and stakes. 							They are in need of some maintenance in order to contain and to encourage fruiting. Remove or adjust any tree ties and stakes still present.		C1
Notes:											