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**Arboricultural Impact Assessment:**
Land to north of Seaside Lane
Easington
Peterlee
Durham
SR8 3TW

**Prepared for:**
Blake Hopkinson Architecture & Design

**On behalf of:**
Snowdon Coaches
Seaside Lane
Easington
Peterlee
Durham
SR8 3TW

**Report ref:** BH_SeasideLn_AIA1.1

| **Report prepared by** | **Position** | **Date** |
|---|---|---|
| Liam Robson MArborA | Arboriculturist | 09/09/2021 |
| | | |
| **Report verified by** | **Position** | **Date** |
| Barry Anderson MCIEEM MArborA | Director | 09/09/2021 |

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## 1.0 EXECUTIVE SUMMARY

1.1 Dendra Consulting Ltd was commissioned to undertake this impact assessment by Blake Hopkinson Architecture and Design, on behalf of Snowdon Coaches. The report was prepared in order to support a planning application for the proposed development of the site for residential use.

1.2 The site visit was made on the 3rd September 2021 by Liam Robson.

1.3 Fifteen trees, five groups and two hedgerows were surveyed. Thirteen individual trees and three groups of trees will require complete removal for development. One hedgerow will require partial removal. The features to be lost comprised low and moderate values.

1.4 Impacts are predicted from the following activities:

- Tree and hedgerow removal.
- General construction works in proximity to trees being retained.

1.5 Mitigation has been recommended as follows:

- Planting of new trees and hedgerows.
- The erection of protective fencing.

1.6 Overall the proposals are likely to have a negative impact at a site level. The proposed new trees and hedgerows have helped to reduce the initial impact caused by the removals required to facilitate the development. A detailed summary table of the impacts before and after mitigation is provided in section 6.0.

## 2.0 INTRODUCTION

### 2.1 Background & Scope

2.1.1 Dendra Consulting Ltd was commissioned to undertake this survey and report by Blake Hopkinson Architecture and Design, on behalf of Snowdon Coaches. The scope of the contract was to undertake an arboricultural impact assessment to support a planning application for a proposed development of land to the north of Seaside Lane, Easington. The survey was carried out in line with BS 5837 – Trees in Relation to Design, Demolition and Construction-Recommendations, 2012 (BSI 2012).

2.1.2 The proposals involve the development of the site for residential use.

### 2.2 Personnel, Timing & weather conditions

2.2.1 A site visit was made on the 3rd September 2021 by Liam Robson. The weather was overcast, with no significant visibility constraints.

### 2.3 Survey methodology

2.3.1 All observations were from ground level. Height was measured, where possible, using a clinometer and is expressed in metres. Crown spread is also expressed in metres. In dense tree cover height and crown spread may have been estimated. Stem Diameter at 1.5 metres was measured using calibrated DBH tape and is expressed in millimetres.

2.3.2 A tree quality assessment is made for each tree or group of trees as recommended in BS 5837. A cascade chart based on the standard is provided as figure 1.

**Figure 1 – Chart for tree quality assessment. Adapted from BS 5837.**

| Category | Criteria | | |
|---|---|---|---|
| **Category U**<br>**Trees unsuitable for retention.** Trees in such a condition that they cannot be realistically retained for longer than 10 years | • Dead, dying or dangerous trees<br>• Trees with serious structural defects<br>• Trees with serious physiological defects | | |
| | **1. Mainly arboricultural values** | **2. Mainly landscape values** | **3. Mainly cultural & conservation values** |
| **Category A**<br>**Tree of high quality** with an estimated remaining life expectancy of at least 40 years. | Trees that are particularly good examples of their species. Particularly of rare or unusual species.<br><br>Trees forming essential parts of a group | Trees, groups or woodlands of particular visual importance. | Trees, groups or woodlands of significant conservation, historical, commemorative or other value. |
| **Category B**<br>**Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years. | Trees that might be categorised in the higher category but are downgraded because of impaired condition. | Trees present in numbers such that they attract a higher collective rating than they would as individuals. | Trees with material conservation or other cultural value. |
| **Category C**<br>**Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 15cms. | Trees not qualifying in higher categories | Trees present in groups or woodlands that do not possess significant landscape values. | Trees with no material conservation or cultural value |

## 2.4 Root protection

2.4.1 The Root Protection Area (RPA) is represented by an area in $m^2$ around a tree which acts as a protective zone. In our schedule of trees it is expressed both as the RPA and as the Root Protection Radius (RPR). The RPR is a figure given in metres used to identify the radius of a circle around a tree which serves to act as the RPA. In certain circumstances the shape of the RPA may be altered to suit site specific factors such as the presence of buildings, roads, other trees etc.

## 3.0 REPORT FINDINGS

### 3.1 Survey summary

3.1.1 Fifteen trees, five groups and two hedgerows were surveyed. The full results of the survey are provided in section 8.0. The trees were examined for physiological and structural defects. Remedial works for such defects have been provided where appropriate, and this has been recommended regardless of development. **Please note that some of this work may be superseded by recommendations required for development purposes.** The results of the tree quality assessment are summarised in figure 2 below.

**Figure 2 – Summary of tree quality assessment**

| Category | Tree/Group numbers |
|---|---|
| **High** | None |
| **Moderate** | T2, T7, T8, T12, G2, G5, H1, H2 |
| **Low** | T3, T4, T5, T6, T9, T10, T11, T14, T15, G1, G3, G4 |
| **Unsuitable for retention** | T1 (off site), T13 |

3.1.2 T1 and T13 are both categorised as being unsuitable for retention, though T1 is situated outside of the site boundary and therefore the recommendation for its removal cannot be made. Both trees are not included within the impact assessment.

### 3.2 Limitations

3.2.1 The details specified within this report are valid for a period of two years.

## 4.0 IMPACT ASSESSMENT

### 4.1 Assessment process

4.1.1 This section of the report identifies and evaluates impacts in the absence of any mitigation. Mitigation is then detailed in section 5.0 of the report. Impacts are categorised into pre-development, development stage and post-development phases.

### 4.2 Pre-development impacts

4.2.1 The proposals require the removal of the following trees: T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T14 and T15.

4.2.2 The proposals require the full removal of the following groups: G1, G2 and G3.

4.2.3 An area of H1 will also require removal to facilitate the development. The retention of a hedgerow along the west boundary is proposed on site, though this may not be possible due to the likely erection of boundary fencing.

### 4.3 Development stage impacts

4.3.1 Generic development works on the site, such as operation of machinery, storage of materials, etc, could result in damage to the crowns, stems and root systems of hedgerows to be retained.

### 4.4 Post development impacts

4.4.1 Potential post development tree/resident conflicts such as encroachment, shading, leaf fall, honeydew, etc usually arise from the erection of residential properties close to large trees. Such problems are subjective and depend entirely on different attitudes to trees. Consequently the impacts are difficult to predict with any degree of accuracy. In this instance, given the proposed retentions, the potential for such impacts is minor.

## 5.0 MITIGATION

### 5.1 Pre development impacts

5.1.1 New tree plantings and hedgerows are proposed on site. Many of the trees will be situated within close proximity to dwellings and therefore these will be of a species with a small ultimate size. Larger trees can be planted within open areas with a greater clearance from dwellings, such as along the east side of the site. These will provide greater like for like mitigation for the larger trees to be lost, though will not compensate entirely.

5.1.2 Species selection and recommendations for the proposed trees and hedgerows should follow that stated within the Ecological Impact Assessment (report ref. BH_SeasideLN_EcIA1.1).

### 5.2 Development stage impacts

5.2.1 Protective fencing of the type specified in figures 3 or 4 below will be installed as shown on the tree protection plan. The fencing will be erected prior to the start of the demolition works. Signs will be attached to the fencing to state that it is a protected area and that it should not be moved during the construction phase.

**Figure 3 – Default protective fencing for trees on development sites.**

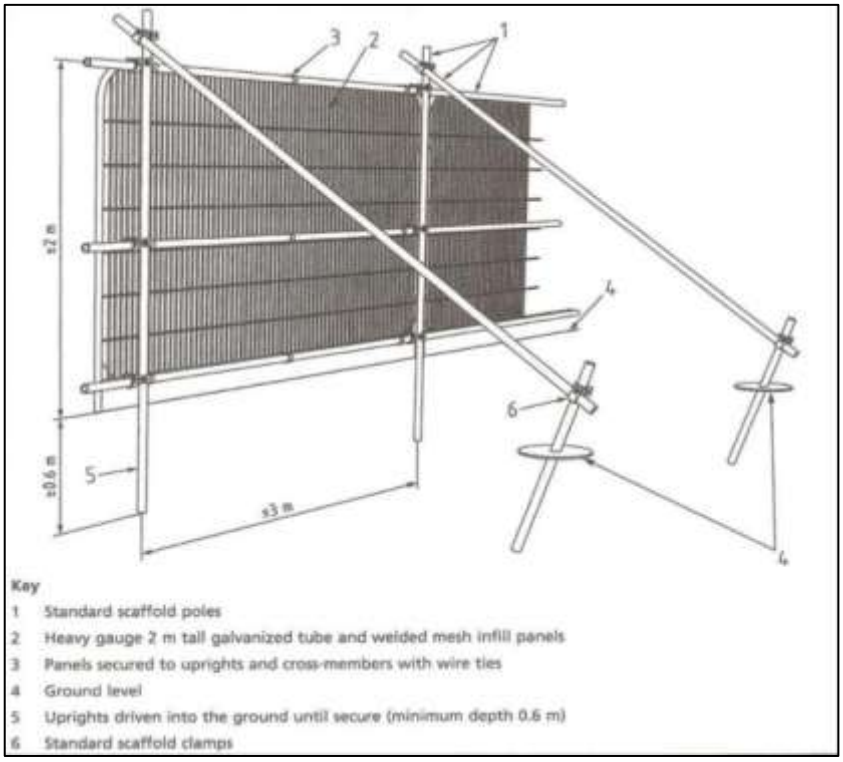
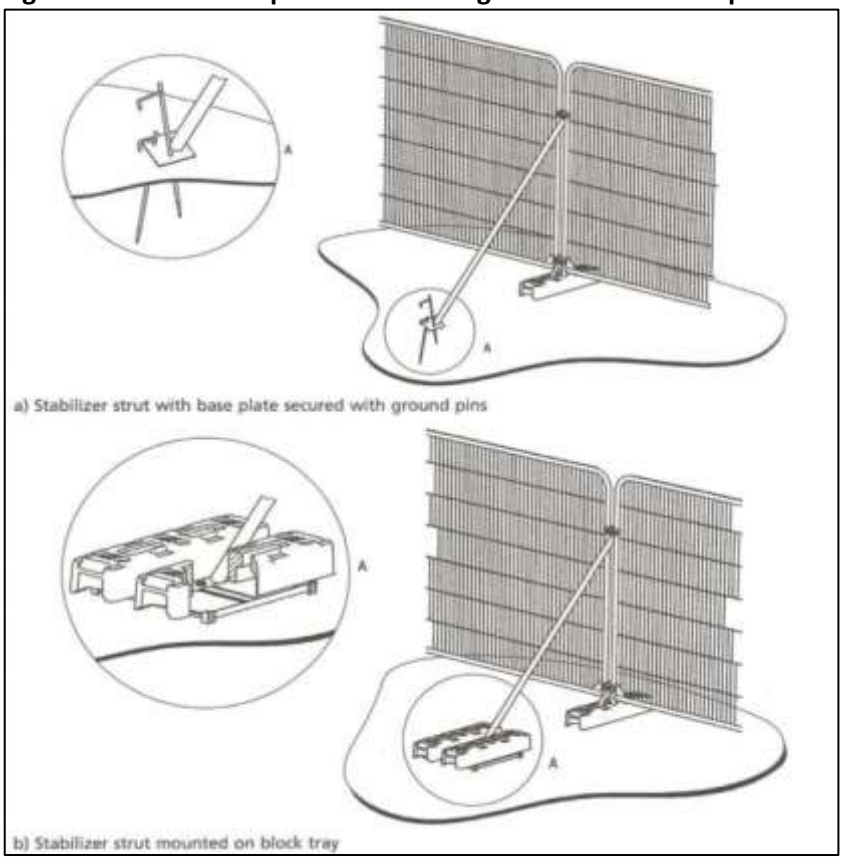



**Figure 4 – Alternative protective fencing for trees on development sites.**




**[Figures 3 & 4 reproduced with the permission of the British Standards Institute]**.

## 6.0 SUMMARY OF IMPACTS AND MITIGATION

6.1 The impacts and mitigation criteria shown in figure 5 below have been used to assess the impacts of the proposed development, which is summarised in figure 6.

**Figure 5 – Impact assessment parameters and predictions**

| Assessment parameters | Measure of impacts |
|---|---|
| Nature and Magnitude of impact | Major negative<br>Negative<br>Minor negative<br>Neutral / Negligible<br>Minor positive<br>Positive<br>Major Positive |
| Extent of impact | Site level<br>Street level<br>Local level<br>District level<br>County level<br>National level |
| Probability that impact will occur | Certain / Highly likely<br>Likely<br>Possible<br>Extremely unlikely |

**Figure 6 – Site impacts before and after mitigation.**

| Proposed activity | Predicted impact without mitigation | Assessment of impact without mitigation | Proposed Mitigation | Assessment of impact with mitigation |
|---|---|---|---|---|
| Tree, group and hedgerow removal | Loss of low and moderate value features | Negative<br>Street level<br>Certain | New tree and hedgerow planting | Negative<br>Site level<br>Likely |
| General construction works in proximity to trees being retained | Damage to stems, branches and roots of trees being retained. Possible decline of trees | Negative<br>Street level<br>Possible | Protective fencing to be erected | Neutral<br>Highly likely |

## 7.0 REFERENCES

**BSI (2012)** *BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.* British Standards Institution. London.

## 8.0 SCHEDULE OF TREES

### KEY

**NR:** Not recorded
**Age:** Y = Young, SM = Semi mature, EM = Early mature, M = Mature, OM = Over mature
**Estimated Remaining Contribution:** Expressed in years
**Recommendations** for health and safety reasons are not highlighted. Recommendations for development purposes are highlighted in RED

| No. | Species | Height (m) | Stem diam. (mm) | Crown Spread (m) N | E | S | W | Height of main canopy (m) | Height of first significant branch (m) | Direction of first significant branch | Age class | Estimated remaining contribution | Comments | Recommendations | Tree quality Assessment | RPA ($m^2$) | RPR (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T1 | Elder | 4.0 | 300 | 2.0 | 1.0 | 3.0 | 2.0 | 0.1 | NR | NR | OM | -10 | Located in neighbouring property. Virtually dead | No comments | U | 41 | 3.6 |
| T2 | Goat willow | 7.0 | 350 | 4.0 | 4.0 | 4.0 | 4.0 | 1.0 | NR | NR | M | 40+ | Inspection limited. Multiple stems from base | Fell for development | B1 | 55 | 4.2 |
| T3 | Hawthorn | 3.0 | 200 | 2.0 | 2.0 | 2.0 | 2.0 | 0.1 | NR | NR | M | 40+ | No major defects | Fell for development | C1 | 18 | 2.4 |
| T4 | Hawthorn | 3.0 | 150 | 2.0 | 2.0 | 2.0 | 2.0 | 0.1 | NR | NR | M | 40+ | No major defects | Fell for development | C1 | 10 | 1.8 |
| T5 | Sycamore | 12.0 | 250 | 2.0 | 2.0 | 2.5 | 2.0 | 0.1 | NR | NR | EM | 40+ | No major defects | Fell for development | C2 | 28 | 3.0 |

| No. | Species | Height (m) | Stem diam. (mm) | Crown Spread (m) | | | | Height of main canopy (m) | Height of first significant branch (m) | Direction of first significant branch | Age class | Estimated remaining contribution | Comments | Recommendations | Tree quality Assessment | RPA ($m^2$) | RPR (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | N | E | S | W | | | | | | | | | | |
| T6 | Sycamore | 12.0 | 400 | 3.0 | 3.0 | 3.0 | 4.0 | 0.1 | NR | NR | EM | 10+ | Two co dominant stems from base. Fork contains extensive included bark | Fell for development | C2 | 72 | 4.8 |
| T7 | Sycamore | 12.0 | 300 | 4.0 | 2.0 | 2.0 | 2.0 | 0.1 | NR | NR | EM | 20+ | Multiple stems from base | Fell for development | B2 | 41 | 3.6 |
| T8 | Sycamore | 12.0 | 430 | 4.0 | 3.0 | 4.0 | 3.0 | 3.0 | NR | NR | EM | 20+ | Two co dominant stems from base. Fork contains included bark. Damage to lower stems evident. Previously failed limbs evident | Fell for development | B2 | 84 | 5.2 |
| T9 | Sycamore | 12.0 | 370 | 4.0 | 4.0 | 4.0 | 2.0 | 3.0 | NR | NR | EM | 10+ | Two co dominant stems from base. Fork contains included bark. Extensive damage to lower stems | Fell for development | C2 | 62 | 4.4 |
| T10 | Sycamore | 6.0 | 150 | 1.0 | 4.0 | 3.0 | 1.0 | 1.5 | NR | NR | EM | 10+ | Asymmetric crown. Suppressed | Fell for development | C2 | 10 | 1.8 |
| T11 | Sycamore | 8.0 | 350 | 3.0 | 3.0 | 3.0 | 3.0 | 1.0 | NR | NR | EM | 10+ | Two co dominant stems from base. Fork contains extensive included bark | Fell for development | C2 | 55 | 4.2 |
| T12 | Sycamore | 6.0 | 260 | 2.5 | 2.5 | 2.5 | 2.5 | 0.5 | NR | NR | EM | 40+ | No major defects | Fell for development | B1 | 31 | 3.1 |
| T13 | Dead | 3.0 | 100 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | NR | NR | D | -10 | Dead tree | Fell | U | 5 | 1.2 |

| No. | Species | Height (m) | Stem diam. (mm) | Crown Spread (m) N | E | S | W | Height of main canopy (m) | Height of first significant branch (m) | Direction of first significant branch | Age class | Estimated remaining contribution | Comments | Recommendations | Tree quality Assessment | RPA ($m^2$) | RPR (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T14 | Sycamore | 4.0 | 180 | 2.0 | 2.0 | 2.0 | 2.0 | 0.1 | NR | NR | SM | 20+ | Two co dominant stems from base. Tree stake still attached | Fell for development | C1 | 15 | 2.2 |
| T15 | Hawthorn | 2.5 | 100 | 2.0 | 2.0 | 2.0 | 2.0 | 0.1 | NR | NR | M | 20+ | No major defects | Fell for development | C1 | 5 | 1.2 |
| G1 | Mixed | 4.5 | 150 | NR | NR | NR | NR | 0.1 | NR | NR | SM | 20+ | Species includes hawthorn, sycamore and Buddleja | Fell for development | C2 | 10 | 1.8 |
| G2 | Mixed | 14.0 | 400 | NR | NR | NR | NR | 0.1 | NR | NR | M | 40+ | Species includes sycamore, rowan and ash. Stand of sycamore and double row of rowan at east of group | Fell for development | B2 | 72 | 4.8 |
| G3 | Mixed | 6.0 | 300 | NR | NR | NR | NR | 0.1 | NR | NR | EM | 40+ | Species includes beech and hawthorn. Stem of 1no beech cut to 2.5m | Fell for development | C2 | 41 | 3.6 |
| G4 | Mixed | 7.0 | 150 | NR | NR | NR | NR | 2.0 | NR | NR | EM | 40+ | Located in neighbouring property. Not inspected in detail. Species includes Scots pine and silver birch | No comments | C2 | 10 | 1.8 |
| G5 | Mixed | 6.0 | 350 | NR | NR | NR | NR | 0.1 | NR | NR | EM | 40+ | Located in neighbouring property. Not inspected in detail. Species includes horse chestnut, cypress and Malus | No comments | B2 | 55 | 4.2 |

| No. | Species | Height (m) | Stem diam. (mm) | Crown Spread (m) | | | | Height of main canopy (m) | Height of first significant branch (m) | Direction of first significant branch | Age class | Estimated remaining contribution | Comments | Recommendations | Tree quality Assessment | RPA ($m^2$) | RPR (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | N | E | S | W | | | | | | | | | | |
| H1 | Mixed | 6.0 | 250 | NR | NR | NR | NR | 0.1 | NR | NR | M | 40+ | Overgrown, unmanaged hedgerow along site boundary and further group encroaching site. Species includes hawthorn, elder, tree cotoneaster, goat willow, sycamore and bramble | Fell section for development | B2 | 28 | 3.0 |
| H2 | Mixed | 3.0 | 200 | NR | NR | NR | NR | 0.1 | NR | NR | M | 40+ | Species includes bramble, hawthorn, elder and sycamore. Hedgerow situated along north boundary of site. Dead elder in group | Remove dead elder in group | B2 | 18 | 2.4 |

**REPORT END**




Appendix 1

Tree Protection Plan

KEY

Tree retention category

Category A
Category B
Category C
Category U

Tree Constraints

Crown Spread

Root Protection Area

Tree Removal

Tree to be removed

Group/hedgerow removal

Tree Protection

Protective fencing

Scale: 1:500 @ A3

The original of this plan was produced in colour - a monochrome copy should not be relied upon

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