



# WE KNOW SERVICES

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## ARBORICULTURAL IMPLICATIONS ASSESSMENT

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TREVALYN WOOD  
MANOR LANE  
ROSSETT  
WREXHAM  
LL12 0HH

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FEBRUARY 2020  
REVISION A

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## **1.0 Introduction**

- 1.1 We Know Services were instructed by Mr and Mrs Horan to carry out an arboricultural survey of trees on land at Trevalyn Wood, Manor Lane, Rossett, Wrexham.
- 1.2 This report details the arboricultural implications of developing the site, including:
  - A survey of the trees on and near the development which may impact the proposal- from ground level, noting their location, species and all relevant parameters, i.e. stem diameter, height, crown spread, condition etc;
  - A tree schedule;
  - Advice on the removal, retention and management of trees;
  - Assessment of the potential effects of the proposal on retained trees and vice versa;
  - Assessment of the requirement for tree protection for the duration of the works; and
  - A mitigation proposal for any loss.
- 1.3 The survey was carried out on 7<sup>th</sup> February 2020 by means of inspection from ground level by an experienced and qualified arboriculturalist. The inspection can be restricted in cases where trees were Ivy clad or surrounded by vegetation.
- 1.4 Under *BS5837: 2012 Trees in Relation to Construction - Recommendations*, the assessment of trees is made objectively. The tree categorisation method identifies the quality and value of the existing tree stock, allowing informed decisions to be made concerning development design layout.
- 1.5 The following documents have been made available by the client:
  - Drawing- Proposed Site Plan.dwg
- 1.6 The supplied drawing did not include tree positions plotted. All trees have been added to the drawing indicatively. Any dimensions regarding tree positions and protective fencing must be checked on site.
- 1.7 The survey was carried out noting the conditions of the trees at the time of inspection. As trees are part of the natural environment, conditions can naturally change; therefore the contents of this report are valid for one year only. After this period, re-inspection may be required.

## 2.0 Survey Methodology

- 2.1 The trees were surveyed (prefixed T, or G for group) and recorded in the tree schedule in **Appendix 1.0**. Where groups are recorded, average height and diameter at breast height (DBH) of the trees in the group are reported. Where access to the base of any trees was limited, stem size was estimated.
- 2.2 All the trees were assessed using: a grading A to C (retention) and U (removal); condition and age class as defined in **Appendix 2.0**.
- 2.3 Where appropriate, canopy spread for each tree was recorded at four cardinal points in order to reproduce an accurate representation of the crown shape of the tree on the tree plan in **Appendix 3.0**.
- 2.4 The survey included all trees within the proposal area and trees near to the proposal.

## 3.0 Proposals and Impact Assessment

- 3.1 The site layout plan within **Appendix 3.0** identifies the trees in relation to the proposed development.
- 3.2 In order to fully assess the impact of the proposals an Impact Table (**Table 3.1**) has been created detailing each tree, which shows the proximity of the associated works.
- 3.3 This can then be assessed in accordance with BS 5837:2012 to determine whether proposals will have a detrimental impact on the health of each tree. Once this has been determined remedial measures can be detailed to reduce the impact the proposals will have on the treescape.

**Table 3.1:** Impact Table

| Tree No. | Root Protection Area identified in table 2 of BS5837:2012 |                                   | Distance to proposed extension (m) | Distance to proposed renewable energy store | Distance to proposed car park (m) | Can the tree/s be successfully retained? |
|----------|-----------------------------------------------------------|-----------------------------------|------------------------------------|---------------------------------------------|-----------------------------------|------------------------------------------|
|          | Area (m <sup>2</sup> )                                    | Equal to a circle with radius (m) |                                    |                                             |                                   |                                          |
| T1       | 191                                                       | 7.8                               | 6.7                                | 27.7                                        | 4.5                               | Yes, with special precautions            |
| T2       | 5                                                         | 1.32                              | 6.2                                | 26.8                                        | 4.0                               | Yes                                      |
| T3       | 122                                                       | 6.24                              | 14.2                               | 33.1                                        | 2.7                               | Yes, with special precautions            |
| T4       | 191                                                       | 7.8                               | 12.7                               | 35.6                                        | 10.5                              | Yes                                      |
| T5       | 72                                                        | 4.8                               | 12.2                               | 37.0                                        | 10.0                              | Yes                                      |
| T6       | 36                                                        | 3.36                              | 15.2                               | 2.3                                         | 13.2                              | Yes                                      |

| Tree No. | Root Protection Area identified in table 2 of BS5837:2012 |                                   | Distance to proposed extension (m) | Distance to proposed renewable energy store | Distance to proposed car park (m) | Can the tree/s be successfully retained? |
|----------|-----------------------------------------------------------|-----------------------------------|------------------------------------|---------------------------------------------|-----------------------------------|------------------------------------------|
|          | Area (m <sup>2</sup> )                                    | Equal to a circle with radius (m) |                                    |                                             |                                   |                                          |
| T7       | 55                                                        | 4.2                               | 22.3                               | 6.9                                         | 11.8                              | Yes                                      |

**Table 3.2:** Impact Assessment

|          | Trees to be retained |                            | Trees to be removed |                    |
|----------|----------------------|----------------------------|---------------------|--------------------|
|          | With no impact       | With detailed construction | Due to condition    | Due to development |
| Tree No. | T2, T4, T5, T6 and   | T1 and T3                  | N/A                 | N/A                |

- 3.4 The proposed new car parking courtyard will be installed within the root protection areas of T1 (39m<sup>2</sup>, 20.41% of existing unsurfaced ground) and T3 (15m<sup>2</sup>, 12.2% of existing unsurfaced ground). Therefore, the use of a cellular confinement system as detailed at **Section 4.1** is considered achievable without causing a significant adverse effect on these trees and is acceptable in accordance with BS 5837:2012.
- 3.5 In addition, special precautions are required for the protection of T1 and T3 during the adjacent fence Installation. It should be noted that the decision has been made to install a timber fence instead of constructing a boundary wall for the car park to minimise the amount of excavation required within the RPA of T1 and T3.

## 4.0 Mitigation Proposals

### 4.1 Car Parking Courtyard Construction

- 4.1.1 As shown above, the Impact Table raises concern of the proximity of the proposed car park to T1 and T3 and the effect the proposals would have on the safe useful life expectancy of these trees.
- 4.1.2 If ground levels remain the same, the detrimental effects the car park would have on this tree would be: -
- Compaction, resulting in oxygen depletion, caused from creating the access way.
  - The loss of a permeable surface.
- 4.1.3 It is possible with the use of a cellular confinement system to be able to create hard surfaces very close to trees without having a detrimental effect.

- 4.1.4 A cellular confinement system provides a load transfer mattress which prevents direct loads on tree roots and reduces the bearing pressure on subsoil's by stabilising aggregate surfaces against rutting under wheel loads.
- 4.1.5 A proposed methodology and cross-sectional diagram for the construction of the access way can be found in the accompanying arboricultural method statement.
- 4.1.6 Should this system be used for the car parking, in the area affecting the above trees then the proposals should not have a detrimental effect on the trees.

#### **4.2 Car Park Fence Installation**

- 4.2.1 The Impact Assessment Plan (Appendix 3.0) raises concern of the proximity of the car parks proposed boundary fence to T1 and 3 and the effect this would have on the Safe Useful Life Expectancy of these trees.
- 4.3 It is therefore proposed that the fence will be installed carefully in line with the measures presented in the accompanying arboricultural method statement where the only excavation to take place will be for the implementation of the fence posts and this excavation will be undertaken by hand to restrict any damage to a minimum.

#### **4.4 Soft Landscape Works within the RPA**

- 4.4.1 Heavy mechanical soil cultivation techniques are not to be carried out within any RPA. Any cultivation should be carried out by hand to minimise damage to tree roots.
- 4.4.2 Existing ground levels within the RPA should be maintained.

### **5.0 Conclusions and Arboricultural Recommendations**

- 5.1 The tree categorisation method identifies the quality and value of the existing tree stock but it is not meant to be interpreted rigidly and is presented in order to form a balanced judgement on tree retention and removal.
- 5.2 A precautionary method of working near trees is detailed in the accompanying Arboricultural Method Statement.
- 5.3 It is considered that in following the advice in this document, any negative factors affecting trees on the site will be minimised.

# **Appendix 1.0**

## **Tree Survey Schedule**

## TREE SURVEY SCHEDULE

| Arboricultural Data Sheet: Trevalyn Wood, Manor Lane |                |          |            |     |                  |     |     |     | Date of Survey: 07/02/2020 |                  | Surveyor: Nicola Wallbank                                                                                                                                                                                                                                           |                                  |                              |
|------------------------------------------------------|----------------|----------|------------|-----|------------------|-----|-----|-----|----------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------|
| Tree No.                                             | Species        | DBH (mm) | Height (m) | Age | Crown Spread (m) |     |     |     | Crown clearance            | Condition rating | Comments and preliminary management recommendations                                                                                                                                                                                                                 | Estimated remaining contribution | Tree quality category rating |
|                                                      |                |          |            |     | N                | E   | S   | W   |                            |                  |                                                                                                                                                                                                                                                                     |                                  |                              |
| T1                                                   | Lime           | 620      | 22.5       | M   | 5.0              | 6.0 | 6.0 | 6.0 | 2.0                        | 2                | Co-dominant specimen with reasonable form. Previously topped. Minor decay evident at pruning cut on stem. Minor deadwood (diameter <50mm). Extensive epicormic growth. – <b>Pollard and remove epicormic growth</b>                                                 | 10+                              | C1/3                         |
| T2                                                   | Yew            | 110      | 3.5        | SM  | 1.5              | 1.0 | 1.5 | 1.0 | 0.5                        | 1                | Good form. Roots are sound and functioning well based on crown signs. Stem is sound with no defects observed.                                                                                                                                                       | 20+                              | C1                           |
| T3                                                   | Sycamore       | 520      | 17.5       | M   | 4.0              | 3.0 | 4.0 | 4.0 | 2.5                        | 2                | Co-dominant species with reasonable form. Bifurcated. Stem covered in dense Ivy. Roots appear to be sound and functioning well based on crown signs. – <b>Sever Ivy</b>                                                                                             | 10+                              | C1/3                         |
| T4                                                   | Lime           | 650      | 16.0       | M   | 5.0              | 5.0 | 5.0 | 5.0 | 3.0                        | 3                | Multi-stemmed with reasonable form. Roots are sound and functioning well based on crown signs. Limited inspection of stem due to epicormic growth but one dead stem which has been reduced to a height of 6 metres is evident. - <b>Full crown reduction by 20%</b> | 10+                              | C1/3                         |
| T5                                                   | Horse Chestnut | 400      | 10.5       | EM  | 4.0              | 3.0 | 4.0 | 6.0 | 2.0                        | 1                | Trifurcated with reasonable form. Minor Ivy cover. Roots are sound and functioning well based on crown signs. Stem is sound with no significant defects observed                                                                                                    | 10+                              | C1/3                         |
| T6                                                   | Cherry         | 280      | 9.5        | M   | 3.0              | 3.0 | 4.0 | 3.0 | 3.5                        | 1                | Trifurcated with poor form. Roots are sound and functioning well based on crown signs. Minor stem wound which                                                                                                                                                       | 10+                              | C1/3                         |

Arboricultural Implications Study – Trevalyn Wood, Manor Lane, Rossett, Wrexham, LL12 0HH

| Arboricultural Data Sheet: Trevalyn Wood, Manor Lane |         |          |            |     |                  |     |     |     | Date of Survey: 07/02/2020 |                  |                                                                                                                                                              | Surveyor: Nicola Wallbank        |                              |
|------------------------------------------------------|---------|----------|------------|-----|------------------|-----|-----|-----|----------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------|
| Tree No.                                             | Species | DBH (mm) | Height (m) | Age | Crown Spread (m) |     |     |     | Crown clearance            | Condition rating | Comments and preliminary management recommendations                                                                                                          | Estimated remaining contribution | Tree quality category rating |
|                                                      |         |          |            |     | N                | E   | S   | W   |                            |                  |                                                                                                                                                              |                                  |                              |
|                                                      |         |          |            |     |                  |     |     |     |                            |                  | exhibits good wound wood .- <b>Reduce and reshape</b>                                                                                                        |                                  |                              |
| T7                                                   | Lime    | 350      | 20.0       | M   | 5.0              | 5.0 | 5.0 | 5.0 | 3.0                        | 1                | Co-dominant specimen with good form. Roots are sound and functioning well based on crown signs. Extensive epicormic growth. – <b>Remove epicormic growth</b> | 20+                              | B1/3                         |

## **Appendix 2.0**

# **Tree Survey Key**

# Arboricultural Implications Study – Trevalyn Wood, Manor Lane, Rossett, Wrexham, LL12 0HH

|                                                                                                                                                                                                                               |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Trees for removal                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                       |
| Category and definition                                                                                                                                                                                                       |  | Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                       |
| Category U<br>Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management                             |  | Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)<br>Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline<br>Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality<br><b>Note</b> – Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                       |
| Trees to be considered for retention                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                       |
| Category and definition                                                                                                                                                                                                       |  | Criteria - Subcategories                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                       |
|                                                                                                                                                                                                                               |  | 1 Arboriculture values                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2 Landscape values                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 3 Conservation values                                                                                                                 |
| Category A<br><b>Those of high quality and value:</b> in such a condition as to be able to make a substantial contribution (a minimum 40 years is suggested)                                                                  |  | Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboriculture features (e.g. the dominant and/or principal trees within an avenue)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)                                                                                                                                                                                                                                                 | Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture) |
| Category B<br><b>Those of moderate quality and value:</b> those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)                                                                |  | Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboriculture features (e.g. trees of moderate quality within avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little impact on the wider locality | Trees with clearly identifiable conservation or other cultural benefits                                                               |
| Category C<br><b>Those of low quality and value:</b> currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm |  | Trees not qualifying in higher categories                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit                                                                                                                                                                                                                                                                                                                              | Trees with very limited conservation or other cultural benefits                                                                       |
| <b>Note</b> - 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 150 mm should be considered for relocation  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                       |

## Age Class

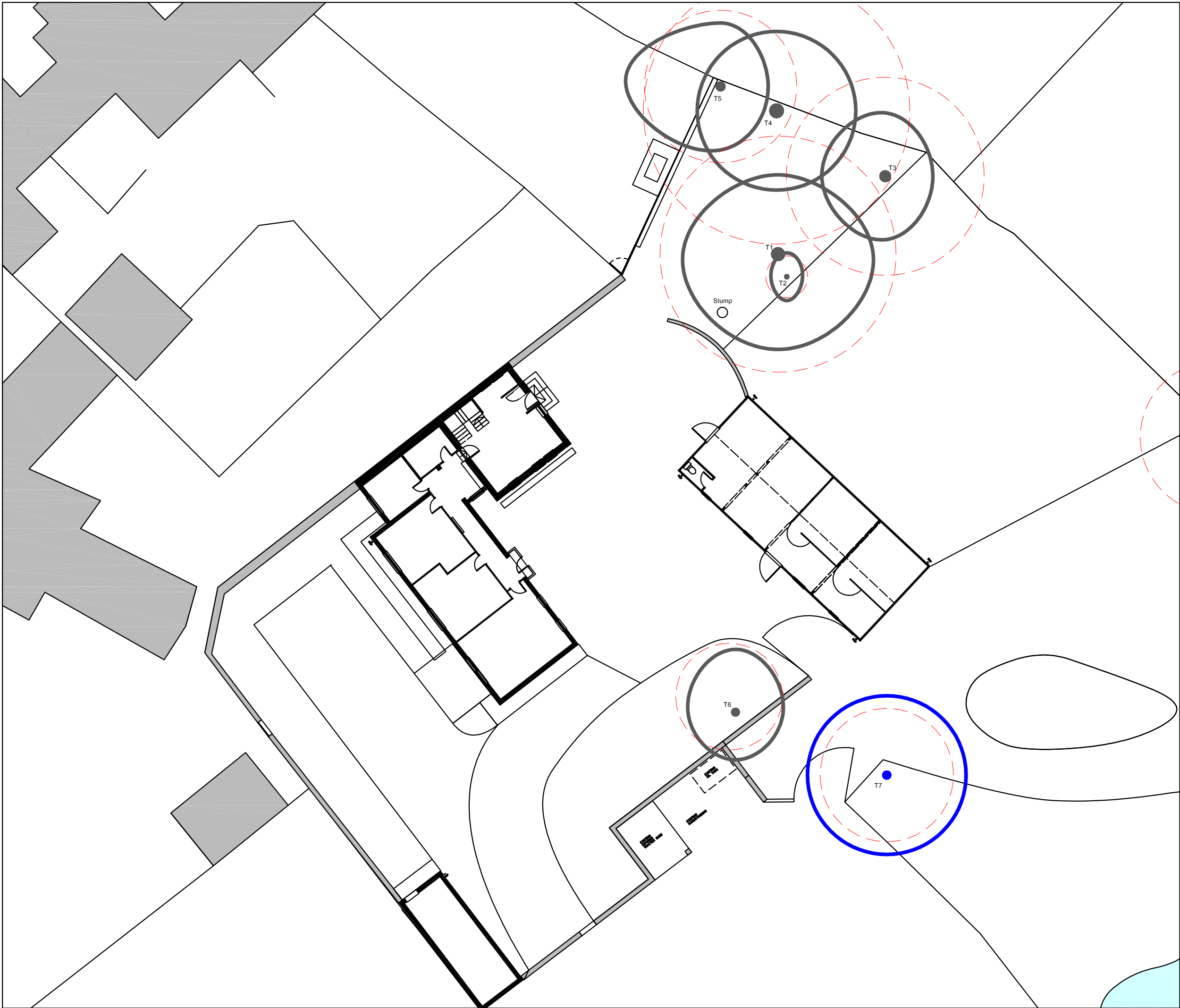
|    |              |                                                          |
|----|--------------|----------------------------------------------------------|
| Y  | Young        | Trees that have not yet established                      |
| SM | Semi-Mature  | Established trees up to 1/3 of expected height and crown |
| EM | Early mature | Between 1/3 and 2/3 expected height and crown            |
| M  | Mature       | Between 2/3 and full expected height and crown           |
| FM | Fully Mature | Full expected height and crown                           |
| OM | Over-Mature  | Crown beginning to break up and decrease in size         |
| S  | Senescent    | Crown in advanced stage of break-up                      |

## Condition

|   |      |
|---|------|
| 1 | Good |
| 2 | Fair |
| 3 | Poor |
| 4 | Dead |

# **Appendix 3.0**

## **Plans**



-  Category A Trees
-  Category B Trees
-  Category C Trees
-  Category U Trees
-  Root protection area

 WE KNOW SERVICES

Yorkon Building  
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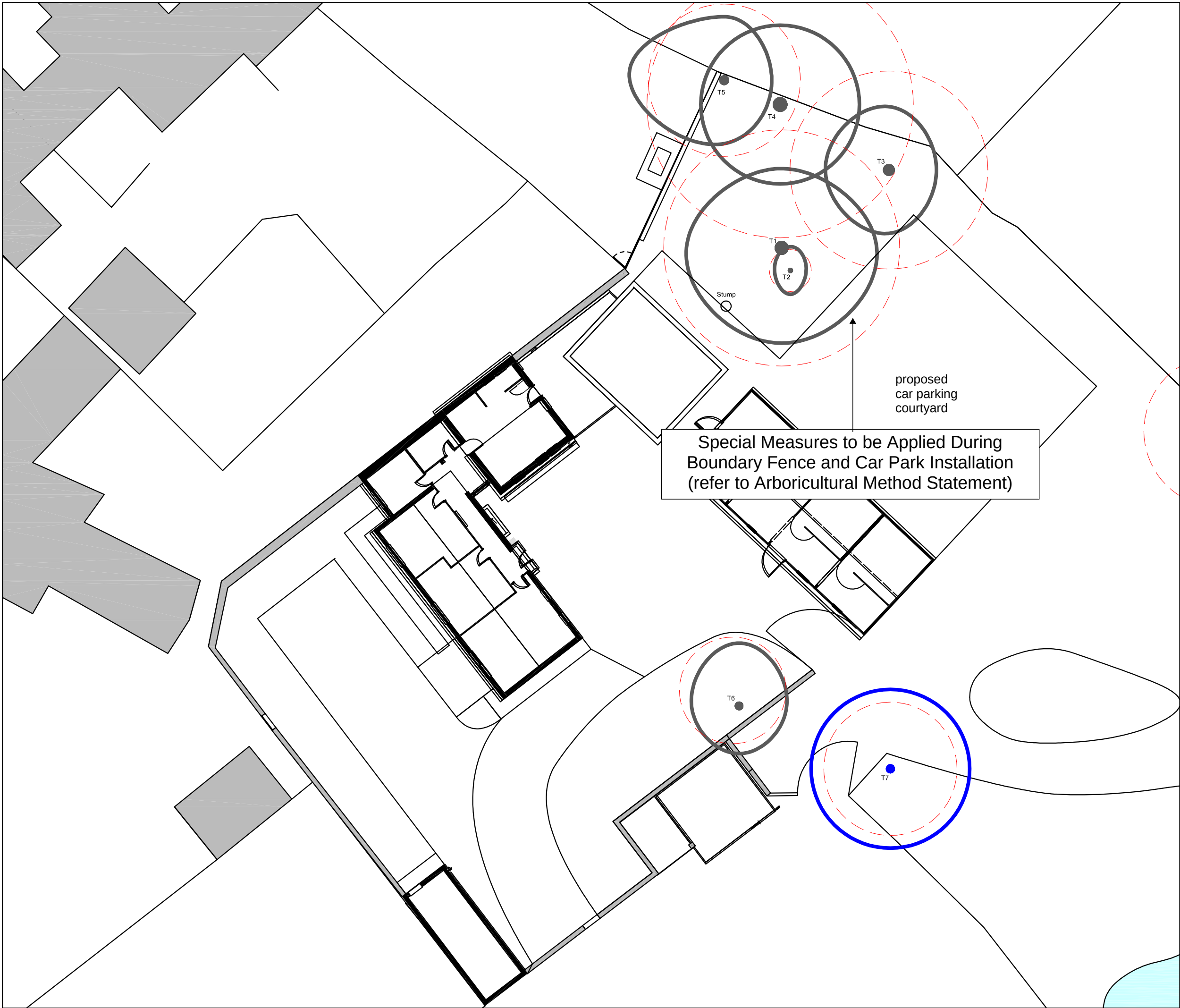
Tel: 0151 443 2308  
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Client:  
Mr and Mrs Horan

Site Address:  
Trevalyn Wood, Manor Lane,  
Rossett, Wrexham, LL12 0HH

|                               |                            |                 |
|-------------------------------|----------------------------|-----------------|
| Drawing Title:<br>BS5837 Plan | Drawing No:<br>19/00080/BS |                 |
| Date:<br>17.02.2020           | Scale:<br>1:300@A3         | Drawn by:<br>NW |

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-  Category A Trees
-  Category B Trees
-  Category C Trees
-  Category U Trees
-  Root protection area

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Client:  
Mr and Mrs Horan

Site Address:  
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|                |              |           |
|----------------|--------------|-----------|
| Drawing Title: | Drawing No:  |           |
| AIA Plan       | 19/00080/AIA |           |
| Date:          | Scale:       | Drawn by: |
| 18/02/2020     | 1:300@A3     | NW        |

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