



**A380 South Devon Link Road (Kingskerswell Bypass)**

**Public Inquiry**

**Devon County Council's Response to  
Proof of Evidence on behalf of Three Corner Plantation Limited**

**(Obj 71): OBJ/TCPL(71)/P/1**

**Response by Michael Smith**

**with contributions by Ian Harrison, Chris Moore, Rosalyn Guard,  
Andrew McCarthy and David Black**

## **1.0 Introduction**

- 1.1 This Rebuttal (**DCC/REB/13**) to the Proof of Evidence of Roger Mewis on behalf of Three Corner Plantation Limited (**OBJ/TCPL(71)/P/1**) has been prepared by Michael Smith with contributions by Ian Harrison, Chris Moore, Rosalyn Guard, Andrew McCarthy and David Black.
- 1.2 Roger Mewis, in his letter dated 30<sup>th</sup> October 2008 objected to the Scheme on a number of grounds. These and the responses are summarised below:
- The compulsory purchase of the land deprives the public of a section of Footpath 39. This is addressed in paragraph 11.1.51 of Michael Smith's Proof of Evidence (**DCC/P/3**).
- The compulsory purchase of the land would destroy a marker oak tree. This is addressed in paragraph 11.12.2 of Rosalyn Guard's Proof of Evidence (**DCC/P/6**).
- In addition, the objection made more general comments about funding for the Scheme which are addressed in the Proof of Evidence of Ian Harrison at chapters 6 and 7 (**DCC/P/2**).
- 1.3 Mr Roger Mewis on behalf of Three Corner Plantation Limited has objected to the Scheme on the grounds that the highway authority has not demonstrated that it has the finance to undertake the Scheme; that a possible Roman road may be affected; the affect on an oak tree; the interruption of a network of footpaths and that the junction of Aller Brake Road with St Marychuch Road does not serve the best interests of the residents of Aller.

## **2.0 Funding (Contribution by Ian Harrison)**

- 2.1 A description of the funding situation is given in **DCC/P/2** at Chapter 6 and Chapter 7 explains the process involving the Regional Funding Allocation, confirming at paragraph 7.1.4 that the Scheme is within the overall funding envelope for the region. Paragraphs 7.1.5 and 7.1.6 also explain that the Department for Transport continually monitor the progress of the Scheme and are aware of the CPO procedures taking place in parallel with the progression of the major Scheme Bid. There is nothing in these procedures which suggest that funding is not available. Therefore, there is good likelihood that the funds will be available once the Scheme has all the necessary CPO orders in place.

## **3.0 Potential Roman Road (Contribution by Chris Moore)**

- 3.1 The suggestion that a Roman road may be present at the junction of Aller Brake Road and St Marychurch Road is based on a map extract submitted by Roger Mewis and stated to be dated circa 1818. The map extract shows an 'Old Road' which appears to extend through the land included in the CPO.
- 3.2 Consultation with the Devon Records Office indicates that the map is part of a series of plans and other documents among the Devon Quarter Sessions records which relate to the stopping-up and diversion of roads, mostly in the nineteenth century. It is described in the Devon Record Office catalogue as relating to the road from 'Keyberry Bridge, Wolborough, over Milber Down and via Hacombe, Barton, Heale Common and Tormoham to Tor Quay' and containing a plan 'showing Milber camp'.
- 3.3 The map extract in fact shows two roads marked 'Old Road'. Comparison with the 1802 Ordnance Survey (OS) surveyor's drawing of the area, held by the British Library, shows both of these 'Old Roads' to have formed part of the previous road network prior to the stopping up and diversion process referred to above.

- 3.4 With regard to the known network of Roman roads, a number of learned works have been published, of which 'Roman Roads in Britain' by I. D. Margery is generally considered authoritative. First published in 1955, the work was updated in 1967 and 1973 and includes suggested or putative alignments as well as those for which definite archaeological evidence exists. Notably, Margery does not identify the suggested Roman road put forward by Roger Mewis. The nearest Roman road suggested by Margery is thought to have extended from Exeter to Teignmouth, crossing the River Teign above Newton Abbot (Margery no. 491).
- 3.5 In conclusion, the 'Old Roads' shown on the 1818 map reflect a nineteenth century legal process related to the regulation of the road network: there is no evidence from the map or from published works of reference to sustain the suggestion that a Roman road may be represented. The existence of the suggested Roman road is a matter of conjecture.
- 3.6 In the event that archaeological remains of whatever date or origin are encountered during construction works at the junction of Aller Brake Road and St Marychurch Road, the archaeological mitigation strategy makes appropriate provision for any such remains to be recorded. This provision is described in Chapter 5 of **DCC/P/7**.

#### **4.0 The Oak tree (Contribution by Rosalyn Guard and Andrew McCarthy)**

##### Design history and first response to objector

- 4.1 This tree is shown in **DCC/A2/6** in Photograph 30 on Figure LA 30. The proposed junction arrangement and re-instatement of redundant carriageway is shown on the attached drawing HEX43444A/SKC/936 included at Appendix 1.
- 4.2 This Sessile oak tree was highlighted in the Environmental Statement (ES) (**CD 2.3, paras 8.4.8 and 9.6.8**) which noted that the proposed Aller Park Road / St Marychurch Road junction had been designed to retain the mature oak tree, although it was not then subject to a TPO. Under Mitigation strategy it was noted (Vol. 2, Para. 8.4.22) that in order to conserve the tree *'porous block paving would be used for road surfacing beneath its canopy, to allow water and air to reach the roots. Any pruning of lower branches to lift the canopy above vehicle height would be undertaken by a qualified arboriculturalist, all in accordance with BS 3998: Recommendations for Tree Work.'*
- 4.3 In the Permanent Mitigation described in **DCC/P/6** at paragraph 6.2.1 repeats the undertaking to use porous paving over the tree roots and Rosalyn Guard's Responses to objectors deals with this tree under section 11.12.

##### Arboricultural report

- 4.4 A specialist arboricultural survey by Aspect Tree Consultancy has been carried out to assess the quality of the tree and to provide specialist comment on the proposed realignment in relation to impact on this tree. A full copy of the report is attached at Appendix 2.
- 4.5 The survey found the tree to be approximately 300 years old and concluded that it is a formerly pollarded specimen, now at full maturity. Its vitality suggests that it is deeply rooted in a largely uncompacted and undamaged soil. Despite the presence of nearby underground services within parts of the root zone and despite the presence of Aller Brake Road, which was constructed within the root zone some 40 years ago, the tree appears in optimum condition.
- 4.6 The arboricultural report made the following observations and recommendations:
- *"The significance of the tree as a boundary marker is unclear... there is no evidence to determine if the tree was a marker or that it was part of a hedge bank. There is no evidence of a hedge bank having been present in the near vicinity or running through*

*the position of the tree. If a hedge bank was removed this is very likely to have entailed the severance of structural roots as tree roots tend to occupy banks laterally due to the high oxygen levels present.*

- *Tree roots will extend considerable distances in undisturbed or favourable ground. The ground around the tree has been heavily disturbed and a road constructed approximately 40 years ago. The tree was able to survive this probably as it has been able to exploit a depth of soil. Ground to the south of the tree (within Ben Stedhams Wood) will be retained and forms the least disturbed area that the tree could occupy. It is, therefore, likely that the tree has favoured this area for root penetration in recent years and the area is very likely to contain a significant and substantial part of the root system.*
- *The route of the road will utilise the most disturbed ground focusing the impact on one side of the tree. This will minimise the impact that the scheme has. The pruning required to provide adequate clearance will only entail the removal of minor secondary branches up to a diameter of 100mm. This will leave small diameter wounds... well below the size of the parent stem. Wounds of this size are highly unlikely to lead to excessive or significant decay in the main trunk or to damage the trees physiological processes. The level of pruning required will be in accordance with BS3998, British Standard for Tree Works.*
- *The potentially (and highly likely) deep rooting nature of the tree and the fact that the tree is in a very good physiological condition means that it is best placed to survive the road building process. The tree is likely to suffer some damage but the combination of factors described mean that this should be within tolerable limits.*
- *BS5837 describes and controls the way in which development should occur near trees and if appropriate controls and procedures are implemented then the tree will be better placed to tolerate the disturbance. The fact that the tree is on a favourable soil type i.e. one that's structure is not easily damaged by compaction means that the residual effect should be acceptable. It is advised that the tree is inspected annually following development to monitor its condition and to allow the appropriate control measures to be implemented. The proposed location provides a pragmatic approach and , as stated earlier, will occupy ground already heavily disturbed.*
- *It is proposed to install a standard highway but with a permeable surface. If the trees root system does occupy the ground under the road then water will be able to percolate to the underlying ground. This is an additional measure that may enhance the ground conditions for the tree and be more favourable for root growth."*

4.7 It is clear that all necessary measures will be put in place to ensure the survival of this ecologically important tree.

## **5.0 Interruption of Footpath Network**

5.1 The footpath network in the vicinity of Milber Woods is shown on Figure 11.1 of Michael Smith's Proof of Evidence Volume 3 **(DCC/A/3)**. The effects of the Scheme on the footpath network are shown on Site Plan 1 in the Plan Folio of the Devon County Council (A380 South Devon Link Road (Kingskerswell Bypass) Classified Road) (Side Roads) Order 2008. **(CD 1.2)**. There would be no effect on Footpath 39. Footpath 40 would be stopped up for a distance of 2m, described in Schedule 1 of the Devon County Council (A380 South Devon Link Road (Kingskerswell Bypass) Classified Road) (Side Roads) Order 2008. **(CD 1.2)**.

5.2 Site Plan 1 also shows an area of highway to be stopped up, which is not paved and currently provides the connectivity between footpaths 39 and 40. New highway 'A' and the improved section of Aller Brake Road, also shown on Site Plan 1, would re-create the connectivity between footpaths 39 and 40, via a pedestrian crossing in

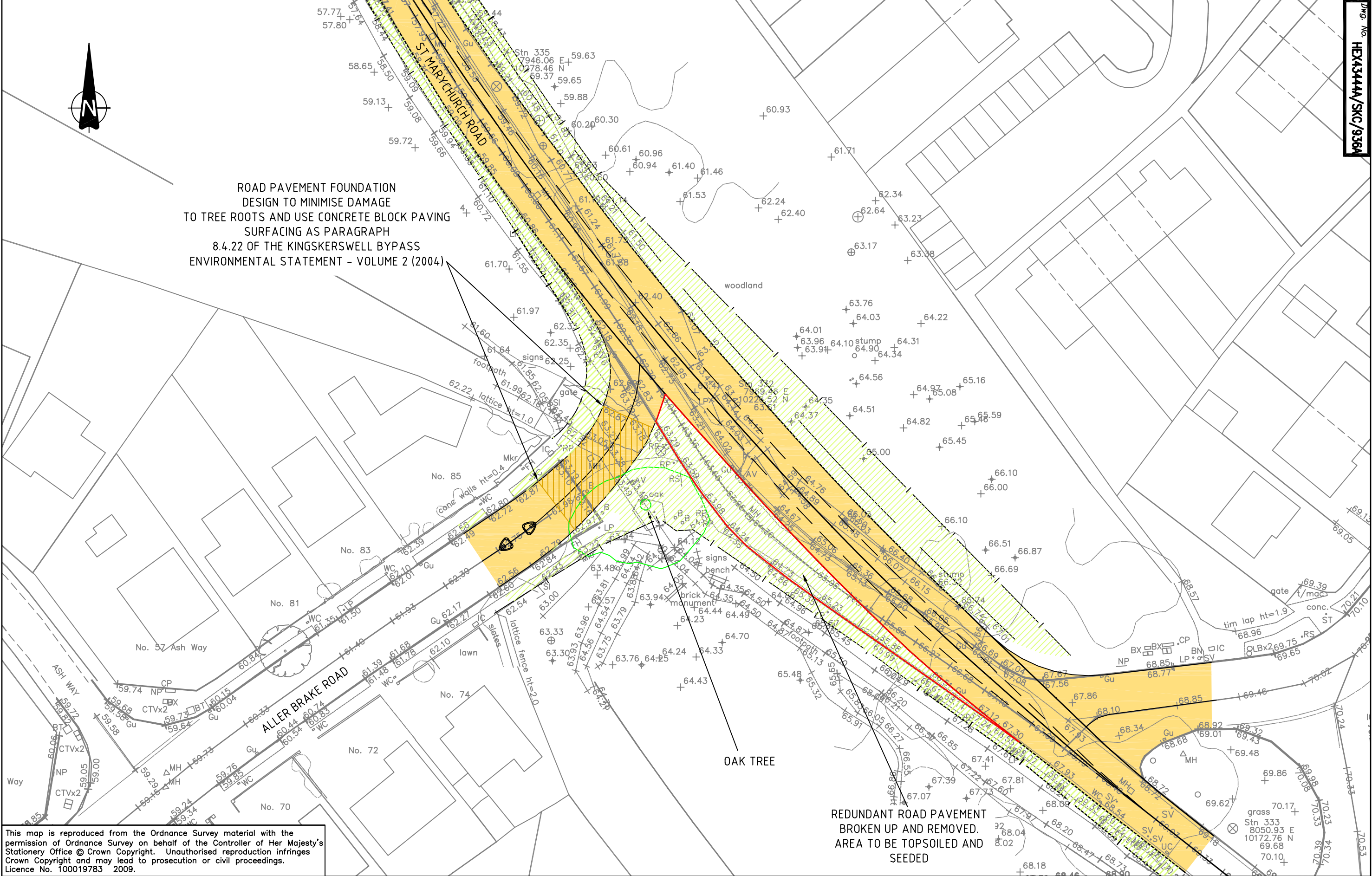
Aller Brake Road. The effect of the Scheme on pedestrian movements between footpaths 39 and 40 is addressed in **DCC/P/3** at section 8.4.8 and states:

*“The peak hour traffic flow between St Marychurch Road and Aller Brake Road would be approximately 100 vehicles per hour. During other parts of the day the flows would be lower. The anticipated delay in crossing the road would be 2 seconds. It is considered that this delay would cause no hindrance to these journeys and therefore there would be no new severance.”*

**6.0 The exit onto St Marychurch Road does not serve the best interests of residents of Aller Park (Contribution by David Black)**

- 6.1 Detailed information on the current and future situation is provided in David Black’s evidence DCC/P/4 at section 15.4.
- 6.2 The current layout at the existing A380 allows traffic to access and egress from the Aller Park onto the A380 at Addison Road and Aller Brake Road. The right turn movement is not particularly safe or satisfactory due to the high volumes of traffic and could not be provided onto the proposed A380.
- 6.3 The new access to be provided by connecting Aller Brake Road to St. Marychurch Road would only allow left-turns out of Aller Park and right-turns into Aller Park. There would be no left turn movements from St Marychurch Road into Aller Brake Road and vice versa. Consequently, there would be no rat-running through the estate.
- 6.4 The current access to St Marychurch Road (and Shaldon Road) is subject to congestion during peak periods. The Scheme will reduce “rat running” on St Marychurch Road and reduce congestion at Penn Inn due to the construction of the flyover. Therefore there will be less congestion in the St Marychurch Road / Shaldon Road area and the access will be both safer and easier than at present. **DCC/P/4** Table 28, shows the effect of the Scheme on traffic flows 15 years after Scheme opening on St Marychurch Road; a reduction of 64%.

**Drawing HEX43444A/SKC/936A**



ROAD PAVEMENT FOUNDATION  
 DESIGN TO MINIMISE DAMAGE  
 TO TREE ROOTS AND USE CONCRETE BLOCK PAVING  
 SURFACING AS PARAGRAPH  
 8.4.22 OF THE KINGSKERSWELL BYPASS  
 ENVIRONMENTAL STATEMENT - VOLUME 2 (2004)

REDUNDANT ROAD PAVEMENT  
 BROKEN UP AND REMOVED.  
 AREA TO BE TOPSOILED AND  
 SEED

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JOB  
**A380 SOUTH DEVON LINK ROAD  
 KINGSKERSWELL BYPASS**

DRAWING TITLE  
**OAK TREE - ALLER BRAKE ROAD/  
 ST MARYCHURCH ROAD  
 LAYOUT PLAN**

No.	Date	Revisions
A	26/06/09	LIMITS OF ROAD PAVEMENTS SHOWN

date	27/03/09	designed	JL
scale(s)	1:500 @ A3	produced	JL
		checked	RH
		approved	RH
ACAD ref			
drawing number	<b>HEX43444A/SKC/936A</b>		





*Tree Report following an Objector Proof of Evidence:*

**A380 South Devon Link Road, Kingskerswell ByPass**

**June 2009**

**VERIFICATION**

Report Title: **Objector Proof of Evidence  
A380 South Devon Link Road, Kingskerswell Bypass.**

Status: **Final**

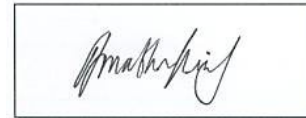
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## Summary

The proposed road scheme requires an upgraded junction at Aller Brake Road and St Marychurch Road. A large Sessile Oak tree is present at the junction, between Milber and Ben Stedhams Woods.

An objection has been received raising concerns about the tree and claiming an historical importance.

The construction of Aller Brake Road involved extensive ground disturbance around, and in, close proximity to the tree. There are also several underground services present to the north of the tree. This area is also used for access by vehicles to Milber Woods and has heavy pedestrian use. The ground conditions to the north of the tree appear to be harsh.

The proposed route of the road is relatively limited due to the existing configuration of Aller Brake Road. However, the proposed route utilises the most heavily disturbed ground and not the undisturbed ground to the south.

The tree is an old specimen at full maturity but is not yet a veteran or over mature tree. The soil type and the very good vitality of the tree indicate that it is able to root deeply within a soil that is not easily compacted or damaged. This has enabled the tree to survive the apparently harsh growing conditions. This also means that the tree is in optimum conditions to tolerate the new road construction.

There is no evidence of a particular or special historical value to the tree. However, the tree is of very good quality and has a high visual amenity value.

# ARBORICULTURAL REPORT

*Objector Proof of Evidence – Oak tree at junction of Aller Brake Road and St Marychurch Road  
A380 South Devon Link Road, Kingskerswell Bypass.*

## 1.0 Introduction

### 1.1 Instruction

- 1.1.1 I have been instructed to assess an oak tree at the junction of Aller Brake Road and St Marychurch Road, Newton Abbot and to appraise the evidence submitted as part of the Compulsory Purchase Order process that is part of the South Devon Link Road scheme. I have been instructed by Mr M Smith of Parsons Brinckerhoff; to report on the following:
1. To assess the quality of the tree.
  2. To provide comment on the proposed route of the road, in relation to the impact on the tree.
  3. To comment on the points raised by the objector to the Compulsory Purchase Order.
- 1.1.2 The report is based on the following drawings and documents which have been supplied by the client or their agent:
- i. Road Layout Plan drawing No: HEX43444A/SKC/936 27/3/09.
  - ii. Document of Evidence – Three Corner Plantation Ltd dated 12<sup>th</sup> June 2009.

### 1.2 Limitations / Methodology

- 1.2.1 The tree on site has been surveyed using VTA<sup>1</sup> methodology to conduct a preliminary assessment of the above ground portion of the tree. No aerial inspection nor invasive probing or drilling has been undertaken. No excavations were carried out nor soil or root samples taken.
- 1.2.2 Should a more detailed inspection be required then this has been outlined within the management recommendations.
- 1.2.3 Trees are large dynamic organisms whose health and condition can change rapidly, therefore due to the changing nature of trees and other site considerations, this report and any recommendations made are only valid for the 12 month period following the site survey, 20<sup>th</sup> June 2009.

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<sup>1</sup> VTA – Visual Tree Assessment. Mattheck & Breloer 1994.

'Principals of Tree Hazard Assessment', Lonsdale.

### ***Third Party Liability***

- 1.2.4 The limit of Aspect Tree Consultancy indemnity over any matter arising out of this report extends only to the instructing client, namely Parsons Brinckerhoff Ltd. Aspect Tree Consultancy cannot be held liable for any third party claim that arises following this report.

### ***Subsidence Risk***

- 1.2.5 This report is primarily concerned with the condition of the existing tree and the application of current guidance for their retention. Any discussion of soil characteristics is only presented where this may have a direct effect on tree growth. This report does not seek to address the specific area of subsidence risk assessment.

## **1.3 Project / Site Overview**

### ***Proposed development***

- 1.3.1 The proposed enhancement of the A380 provides a bypass to Kingskerswell including a flyover over Penn Inn Roundabout. The scheme includes the upgrading of other road junctions and associated works, including the opening of the junction between Aller Brake Road and St Marychurch Road.
- 1.3.2 Aller Brake Road appears to have been originally built with the intention of extending the road to form the junction with St Marychurch Road. This is indicated by the road width and configuration.
- 1.3.3 The scheme shows the oak tree to be retained in the proposed layout.
- 1.3.4 The site is located on the southern fringe of Newton Abbot and the oak tree is located at the north-eastern end of Aller Brake Road at the junction with the St Marychurch Road. The oak is located between Milber Woods, located to the north-west and Ben Stedhams Wood to the south-east. The tree is situated in a grass verge between the two roads at an intersection of several informal footpaths.
- 1.3.5 The site is in a generally elevated position with open views to the west and with land rising to the south.
- 1.3.6 The area of Ben Stedhams Wood and Milber Woods nearest the tree contains young broadleaved trees that are approximately 15-20 years old. Aller Brake Road was built to within 2.5 - 3m of the trunk of the oak tree.

## **1.4 Tree Details:**

### ***Above ground***

- 1.4.1 The dimensions and condition of the tree is included in a table in Appendix 1.
- 1.4.2 The tree is a Sessile oak (*Quercus petraea*) and is 23.5m tall with a stem diameter of 130cm measured at 1.3m above ground level. The tree has an average radial crown spread of 8m.
- 1.4.3 The tree is in a good overall condition with a full foliage cover and good recent extension growth demonstrating good vitality. The tree has a very small level of dead wood present in the crown indicating that the tree is not in physiological decline but in a good condition. The levels of dead wood and defects are low for a tree of this age and species. The tree has demonstrated good extension growth in the last few years with 8-12cm being the average extension of each branch and extension growth is even across the crown. This indicates a tree in maturity and not in senescence or decline.
- 1.4.4 The tree has a single main trunk up to 1.8m above ground level and then divides into four primary stems with the eastern one the largest. The pattern of branch growth indicates that the tree was pollarded (or topped) in the past i.e. cut back to bare stems at 4-8m above ground level.
- 1.4.5 The crown contains several minor defects that appear to have arisen from wind related damage. None of the defects indicates an overall decline in the condition of the tree but the overall condition of the crown may indicate that any previous decline (possibly due to the 1960's road construction) has been arrested and that the tree has entered into a period of good health. There is no visible or audible evidence of significant decay being present in the main stem, or main buttress roots.

### ***Below ground***

- 1.4.6 There is no above ground evidence of below ground problems or disorders. The vitality of the crown is very good for a tree of this age and size. The health and vitality of the crown indicates that the root system is functioning properly.
- 1.4.7 The rooting area of the tree appears limited, or has been affected by, the presence of underground services, footpaths and existing roads (see section 1.5). The full root protection area (RPA) as calculated by the British Standard for Trees in relation to construction - Recommendations, BS5837:2005 does not appear to be present or may need to be modified to more accurately describe the ground conditions i.e. the rooting pattern is not symmetrical and the tree may be exploiting a depth of soil. See also section 1.5.

### ***Age and status of the tree***

- 1.4.8 The tree has been calculated as 293 years old using the formula and system described in The Forestry Commission Practice Note - Estimating the Age of Large and Veteran Trees in Britain, (John White November 1998).

- 1.4.9 The growth pattern of the tree indicates that it is in full maturity (within the mid-point of life and / or within the final 50% of its expected life span) and not in senescence or decline. The tree does not have the range of characteristics associated with a veteran tree (i.e. a tree that is exceptionally old or large for the species usually with a range of defects and habitats that enhance its biodiversity). Whilst the tree is large and relatively old there is insufficient evidence to indicate that it has entered the over mature and veteran stages as they are normally defined.

### **1.5 Ground conditions:**

- 1.5.1 The ground around the tree has been heavily disturbed over the recent past i.e. since the construction of Aller Brake Road in the 1960's. In addition the area immediately around the tree is used heavily by pedestrians and vehicles. Vehicular access into Milber Woods, by the Teignbridge District Council Countryside Management Section and their contractors, crosses the RPA of the tree. The ground is generally uneven, rutted and with clearly worn paths, demonstrating the heavy use. A pedestrian gate for Ben Stedhams wood is in very close proximity to the trees trunk.
- 1.5.2 Several manhole covers are present to the north of the trunk within the verge between the two roads. The manholes indicate the presence of a variety of underground services and demonstrate that the ground has been heavily disturbed in this area over many years. The route of the services and the location of any trenches that were required to install the services are unknown.
- 1.5.3 Aller Brake Road was constructed to within 2.5 – 3m of the trunk of the tree. There is a level section of verge adjacent to the road that appears to have been remodelled i.e. lowered, as part of the road building. It is very likely that the initial disturbance was in close proximity to the tree as evidenced by the small raised mound that the tree is situated on. These works would have occurred within the crown spread of the tree even at the time of construction.
- 1.5.4 The numerous informal footpaths are well used with frequent traffic entering the woods and from pedestrians crossing the St Marychurch Road. The soil is compacted in localised, but extensive, areas, in very close proximity to the trunk.

### ***Soil conditions:***

- 1.5.5 The soil is characterised as freely draining acid loamy soils over rock that favours steep acid upland pastures, dry heath and moor with gorse, bracken and oak woodland as a typical habitat (National Soils Resources Institute, Cranfield University). The soil appears to have a high gravel content and is clearly free draining. It is likely to have a low clay content.

### ***Rooting depth:***

- 1.5.6 Trees tend to root at shallow depths in the upper soil profile and normally within the upper 600mm. This is due to the presence of nutrients, water and oxygen in the upper soil profile. However, there is a variation in tree species and on soil types. Helliwell & Fordham (1992) and Roberts et al (2006) both state that there is a tendency for a pattern of deeper rooting on deep and loose soils. This can also be influenced by the ability of roots to spread laterally i.e. Compacted ground or soil with a high clay content may restrict lateral spread in favour of a vertical depth.

- 1.5.7 The Forestry Commission Information Note – The influence of species and soils on root depth (Peter Crow 2005) provides evidence of the variability of root depth by species and on soil type. If a soil has a low bulk density then it is common to find roots at a greater depth than expected especially if the levels of oxygen and moisture are high, as found in soils with a high gravel but low clay content i.e. Soils that are free draining sands and gravels. This is possible for several reasons including the ability of roots to penetrate the soil, the ability of the soil to retain moisture but not become waterlogged. A loose soil will promote a wider spreading and potentially deeper root system.
- 1.5.8 The document goes on to provide a probable rooting depth for different tree species on different soil types. On the soil type thought to be present oak can root to a depth of up to, but less than 4m.
- 1.5.9 This potential for deep rooting would provide an explanation for the success of the tree following the installation of Aller Brake Road and the harsh ground conditions, due to site use, around the tree. The level of works required to install the original road would have entailed the excavation and severance of roots that were likely to lead to the decline, and possible death of the tree, had the roots been occupying a shallow layer of ground.
- 1.5.10 Trees can take many years to show the symptoms of damage that occurs, especially from construction. The tree is demonstrating very good vitality indicating that the damage that occurred during the initial road construction was limited and/or that the tree has recovered from that damage.

## **1.6 Objection by Three Corners Plantation Ltd:**

- 1.6.1 The objection submitted covers several issues that are outside the scope of this report i.e. The presence of a Roman Road and the funding of the scheme.
- 1.6.2 The objection states that the tree, estimated to be around 300 to 400 years old, is [assumed] that it is a marker oak tree in that it defines a boundary point. It goes on to state that the roots could extend two or more metres beyond the extreme limit of the branches, and if that is the case the roots could expand the entire width of Aller Brake Road and excavations for the road would damage the root structure with the possible demise of the tree.
- 1.6.3 The significance of the tree as a boundary marker is unclear. The tree is nearly 300 years old (see section 1.4.8) and is likely to have been a significant tree when the submitted Title map was drawn up. There is no evidence to determine if the tree was a marker or that it was part of a hedge bank. There is no evidence of a hedge bank having been present in the near vicinity or running through the position of the tree. If a hedge bank was removed this is very likely to have entailed the severance of structural roots as tree roots tend to occupy banks laterally due to the high oxygen levels present.
- 1.6.4 Tree roots will extend considerable distances in undisturbed or favourable ground. The ground around the tree has been heavily disturbed and a road constructed approximately 40 years ago. The tree was able to survive this probably as it has been able to exploit a depth of soil. Ground to the south of the tree (within Ben Stedhams Wood) will be retained and forms the least disturbed area that the tree could occupy. It is, therefore, likely that the tree has favoured this area for root penetration in recent years and the area is very likely to contain a significant and substantial part of the root system. No service runs occur here either.
- 1.6.5 The route of the road will utilise the most disturbed ground focusing the impact on one side of the tree. This will minimise the impact that the scheme has.

- 1.6.6 The pruning required to provide adequate clearance will only entail the removal of minor secondary branches up to a diameter of 100mm. This will leave small diameter wounds that are well below the size of the parent stem. Wounds of this size are highly unlikely to lead to excessive or significant decay in the main trunk or to damage the trees physiological processes. The level of pruning required will be in accordance with BS3998, British Standard for Tree Works.
- 1.6.7 The potentially (and highly likely) deep rooting nature of the tree and the fact that the tree is in a very good physiological condition means that it is best placed to survive the road building process. The tree is likely to suffer some damage but the combination of factors described mean that this should be within tolerable limits.
- 1.6.8 BS5837 describes and controls the way in which development should occur near trees and if appropriate controls and procedures are implemented then the tree will be better placed to tolerate the disturbance. The fact that the tree is on a favourable soil type i.e. one that's structure is not easily damaged by compaction means that the residual effect should be acceptable. It is advised that the tree is inspected annually following development to monitor its condition and to allow the appropriate control measures to be implemented.
- 1.6.9 It is proposed to install a standard highway but with a permeable surface. If the trees root system does occupy the ground under the road then water will be able to percolate to the underlying ground. This is an additional measure that may enhance the ground conditions for the tree and be more favourable for root growth.
- 1.6.10 The alignment of the proposed road is extremely limited and appears to have been fixed by the position that Aller Brake Road was constructed in many years ago. It appears highly likely that the intention was to extend the road in the future, based on the width and position of the road and the end point without a turning head. The proposed road cannot be altered significantly due to the location of adjacent dwellings. The proposed location provides a pragmatic approach and , as stated earlier, will occupie ground already heavily disturbed.

## **1.7 Proposed mitigation measures**

- 1.7.1 The scheme should be implemented following the production of a detailed arboricultural method statement to control construction access and operations. This should be in accordance with the advice in BS5837 and relate to the construction exclusion zone and restrict access by machinery and control the storage of materials and chemicals that may contaminate or damage the soil structure or harm the tree. If the appropriate controls are put in place this will minimise the impact on the tree. This is a standard process and can be easily achieved with the appropriate involvement of a suitably qualified and experienced arboriculturist during the construction phase.
- 1.7.2 A permeable surfacing will enable any roots present under the road surface to gain access to water.
- 1.7.3 The tree should be pruned in accordance with BS3998 and / or the European Tree Pruning Guide (ISA).
- 1.7.4 Other measures may also aid the tree. The clearance of younger trees from the area at the entrance to Ben Stedhams Wood (young ash) will reduce the competition on the tree. The District Council should be contacted to gain their involvement in this matter.

## **2.0 Conclusion**

- 2.1 The proposed road alignment has been influenced by the position Aller Brake Road was constructed in. The proposed route will utilise ground that has been heavily disturbed by the construction of the road, the installation of under ground services and the access into Milber Woods.
- 2.2 The oak tree is a large mature specimen in a very good condition especially considering its age and proximity to repeated and extensive ground disturbance. Evidence on site, and the known soil type, indicate that the tree roots are able to extend to a greater depth than usually expected. This would appear to have enabled the tree to survive the potentially harsh conditions.
- 2.3 The tree is in a good physiological condition and appears well placed to tolerate the proposed road. This will be dependant on the appropriate protection measures and monitoring being employed during the construction phase.
- 2.4 There is no evidence of the tree having a particular historical significance or forming a specific boundary feature or landmark.

**References:**

Crow, P - The Forestry Commission Information Note – The influence of species and soils on root depth, 2005.

Helliwell D R, Fordham S J, Tree Roots and Tree Growth, Reading Agricultural Consultants, 1992.

Roberts J, Jackson N, Smith M – Tree Roots in the Built Environment, Research for amenity trees No.8 , Department for Communities and Local Government, 2006.

White J, The Forestry Commission Information Note – Estimating the age of large and veteran trees in Britain, November 1998.

## **Appendix 1**

### **Tree Survey Data Sheet**

winds.

Weather: Clear, Light

Species: Sessile Oak (*Quercus petraea*)  
20.6.09

Date Inspected:

Height: 23.5m                      Stem Diameter at 1.3m: 130 cm

Crown Spread: N 7.4, E 9.7, S 7.4 W 8.3

Recent extension growth: 2008 – up to 15cm but averaging 8-12cm. Similar patten of growth over the last four growing seasons.

Condition:

Crown:

- Single trunk up to 1.8m then divides into four primary stems, the eastern the most significant.
- SW limb fractured at 10m above ground and lost top and dominance. No significant decay visible.
- Central Stem: deadwood present at 4m – up to 200mm in diameter. Minor deadwood throughout the crown, typical for the species and age of the tree and not an indication of decline.
- Old occluded and partially occluded pruning wounds at the base of the primary stems with limited decay apparent.
- Possible old pollard.
- Full foliage cover with good foliage density.

Trunk and roots:

- No evidence of significant decay in the main buttress roots or the trunk.
- Eastern primary limbs have a partially included branch union at their bases.

Notes:

No features associated with Veteran Tree status visible i.e. Cavities, decay, significant wounds, decline, progressive deadwood. The tree is at full maturity but not yet senescent.