PRELIMINARY ARBORICULTURAL ASSESSMENT

PRE- APPLICATION

Proposed development comprising the provision of six chalets at the Falcon Inn Whitby Road, Cloughton

for
Mr Ray Owen

Prepared by
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Reason For the Report

Lawson Harper was asked to assess the condition and long-term viability of the plantation along with its suitability for change of use incorporating chalet type holiday accommodation.

Timing and Extent Survey

The report is based on initial visual and photographic survey completed on 9th February 2005.
The survey is a preliminary assessment only, intended to gauge the scope of any subsequent assessment and management plan which may be needed to secure a
long-term future for the site, prior to any consideration of change of use.

Description of Site

The site comprises an unnamed ‘L’ shaped plantation to the north and west of the Falcon Hotel extending to 1.2ha. For the purposes of this report and to differentiate the site from adjoining woodland, it will hereafter be referred to as the Falcon Hotel Plantation.

The plantation is surrounded to the north and west by extensive forestry plantingm but is physically separated from the adjacent woodland by access/fire break drives.

To the south and east lie the hotel buildings and open farmland which appears to be permanent, improved pasture. The landform falls significantly to the east where it meets the sea some *m from the site.

Fig 1 Hotel in relation to the plantation

Description of the Plantation

The plantation is typical of the forestry in the North York Moors area, promoted by forestry grants in the 1950s and 60s to encourage afforestation of uplands and moor lands. The plantation is around 40-50 years old.

From evidence of the existing distribution of trees on site and measured site survey (Appendix 1 Drawing No 1191-1 R Winn Architectural Design), the Falcon Hotel plantation appears to have been planted on a 2m grid with a standard forestry mix of Scots Pine with around 10% larch. The mature trees are of a single age although there is some new under planting of pine within the last three years, evidently to ‘gap up’ the existing stand.
There is some incursion of birch and holly at the site perimeters. The ground flora is sparse with only bracken and blackberry evident at time of survey. There are some grasses within areas of open canopy.
There are no defined woodland strata and the plantation is generally devoid of lower story or sub-canopy species.

It is evident that management has not been consistent over the production period; there is some thinning in the centre (either managed or through natural losses) but not at the perimeters. Where the trees have not been thinned, growth is etiolated - taller and thinner than would be expected with a properly managed plantation.

Fig 2 General view of the plantation

There is no evidence of ongoing forestry activity other than the replanting. There appears to be no sporting use. The site perimeter is unfenced and there is a gateway from the Falcon Hotel car park. This and foot-worn trails in the plantation, suggest that informal public access has been established on the site.

Fig 3 Public access to plantation from the Falcon Hotel car park

The type of forestry practice used at the Falcon Hotel plantation is limited in ecological interest, recreational value or sporting use. Over the past 25 years the Forestry Commission has recognised the shortfalls of monoculture with no native planting. It is now engaged in a programme of redesign once timber crops reach maturity and can be felled.

The plantation does, however, function as a shelterbelt to the Falcon Hotel and provides a significant and appropriate setting for the buildings. Woodland in this location is valuable in terms of visual character and will contribute considerably to patron attraction.

Planting mix and method of planting is designed to be cropped through thinning, then clear felled on maturity. The contemporary planting to the north and west of the plantation in the ownership of the Forestry Commission, has been block felled, indicating that the woodland is now mature and could be cropped.

Condition of the Plantation

The plantation does carry some useful timber in areas where managed or natural thinning has occurred; however the majority is weak, thin and of low commercial value.

The individual trees on cursory inspection appear to be healthy with few signs of needle drop, decay, die back or disease.

There are a large number of mature trees, which have recently fallen.
The falling pattern is uniform to the southeast and forms a clear line of damage extending from the north west to south east corner of the site

Initial examination of the fallen trees indicates that both larch and pine are affected and that the trees were healthy at the time of falling. There is also some evidence of snapping of bowl at approximately 3m.

Examination of the root plate shows rooting to be extensive and interlinked. It is also extremely shallow – only 100-200mm. Clay loam adheres to the roots and a heavy clay sub-soil is evident at the root horizon. There is no penetration of roots into the sub soil.

As the trees are 40-50 years old and are apparently healthy, losses cannot be attributed to disease or senility.
Sudden catastrophic failure coincided with high winds and the uniform direction of drop and the loss of mainly strong mature trees with heavy canopy indicate windthrow as the cause of the damage.

Fig 4 Uprooted trees showing shallow root system

Soils Assessment

A newly excavated drainage trench on the adjacent plantation clearly shows the organic rich clay soil to extend to only to a depth of 100-200mm, below which there is a distinct and abrupt change to heavy waterlogged mineral clay. There is no mixing of the soil horizons, which indicate the site was not ripped prior to planting.

Fig 5 Drainage trench showing shallow soil horizons

Assessment of the Viability of the Existing Plantation

Although the individual trees within the plantation are currently healthy, they have either reached maturity or due to lack of timely management, are stunted or etiolated and unlikely to reach their potential.

The lack of thinning has created an interlinked root plate and this problem is compounded by the shallow organic soils overlaying waterlogged mineral clays, causing rooting to spread outward with little anchorage.

This woodland has until recently remained stable; however the block felling of the Forestry Commission land to the north and west of the site has created an opening for wind from a direction the trees in the centre of the plantation have not previously experienced. Having grown sheltered from northerly winds the stand has developed little rooting resistance to prevent overturning.

The altered wind pattern leaves the Falcon Plantation exposed. The effect of this is particularly severe at ground level since winds, which would previously have been slowed and filtered by the adjacent woodland, are now unchecked.

Northerly winds which would previously have been lifted above the canopy by the barrier of adjacent woodland, now fall back to ground level, further increasing the intensity of the forces experienced by the Falcon Plantation.

The remaining Forestry Commission woodland blocks now serve to funnel winds towards the site. Therefore the plantation now experiences highly concentrated wind strengths at ground level from a direction which was previously sheltered.

Fig 6 Area of clear felling to the north and west of the plantation

As trees within the site fail, the interlocking root plate of their neighbours is weakened and the winds are carried further into the woodland.

Once the ‘domino ‘ effect of windthrow has begun, it is impossible to arrest it, other than by providing immediate shelter. Replacing the felled trees by replanting will not provide any relief to the site or prevent further losses, as the time necessary to re-establish sheltered conditions is greater than the time scale in which the Falcon Plantation will be devastated.

Now that the plantation is opened up to wind damage, the losses will continue and become more severe with each successive period of wind damage. Planting to the edge of the site, which has been exposed to wind during its growth, will have established rooting patterns able to resist northerly and westerly winds. The edge planting is therefore likely to survive but little towards the centre of the site has any long-term viability.

The central trees are now subject to sudden loss, which may or may not be associated with strong wind. The weight of canopy itself is sufficient to bring down the tree once the interlinked root plate is weakened.

The detrimental effect of clear felling the blocks adjacent to this site would have been apparent prior to felling and the resulting windthrow domino effect now witnessed was entirely predictable.

Conclusion

The woodland was planted entirely for commercial use and was designed to be clear felled around the year 2000.

The new exposure to wind damage had rendered the central portions of the stand unstable. The plantation is no longer viable apart from some specimens at the perimeter.

This plantation is highly unstable and as a matter of urgency requires action to prevent public access on grounds of health and safety.

With the site in its current condition the loss of timber value will be total in approximately 5 years. The loss of the central trees will considerably reduce the amenity value and visual quality of the plantation.

It is currently unsafe for the introduction of any access, including the proposed chalet development.

Recommendation

A management plan be drawn up to identify trees subject to wind throw and those which may have sufficient wind tolerance to remain viable.

Although the lack of management has considerably reduced the timber value, it still remains sufficient to fund the selective felling, making safe any replanting of a mix which offers more diversity in ecological and landscape interest and which has long term viability.

In line with an agreed management plan, felling and replanting of the central vulnerable areas is recommended, along with selective felling and replanting of the perimeter planting to remove weak, damaged trees and to increase diversity and visual quality.