

Bat Crossing Type A: Indicative Post and Wire Gantry Structure

The structure will consist of steel cables to bridge the carriageway, supported by treated timber posts and anchored at either end in concrete slabs (structure to be designed to engineer's specification).

Tree planting will surround the gantry structure and merge with existing woodland. On establishment of an adequate tree canopy the gantry crossing could be removed, subject to an ecologist's approval.

Native climbing plants such as 'Old Mans Beard' and Honeysuckle to be planted at anchor points at and the foot of timber structural posts on both sides of the carriageway to help ease the gantry structure into its setting.

Plant and tree species, density and ratios to be submitted to the Forest of Dean District Council for approval. Planting should include trees ranging in size from 8-10cm girth feathered 300-350cm high, to 20-25 cm girth semi mature 425 - 600 cm high. Shrubs to range in size between 40-60cm high, container grown in 3l pots to 60-80 cm high container grown in 5-7l pots or bare root (depending on species and season).

Indicative plant list:

Trees

English Oak *Quercus robur*, Ash *Fraxinus excelsior*, Beech *Fagus sylvatica*, Common Alder *Alnus glutinosa*, Silver Birch *Betula Pendula*, Norway spruce *Picea abies*, Wild cherry *Prunus avium* and European Larch *Larix decidua*.

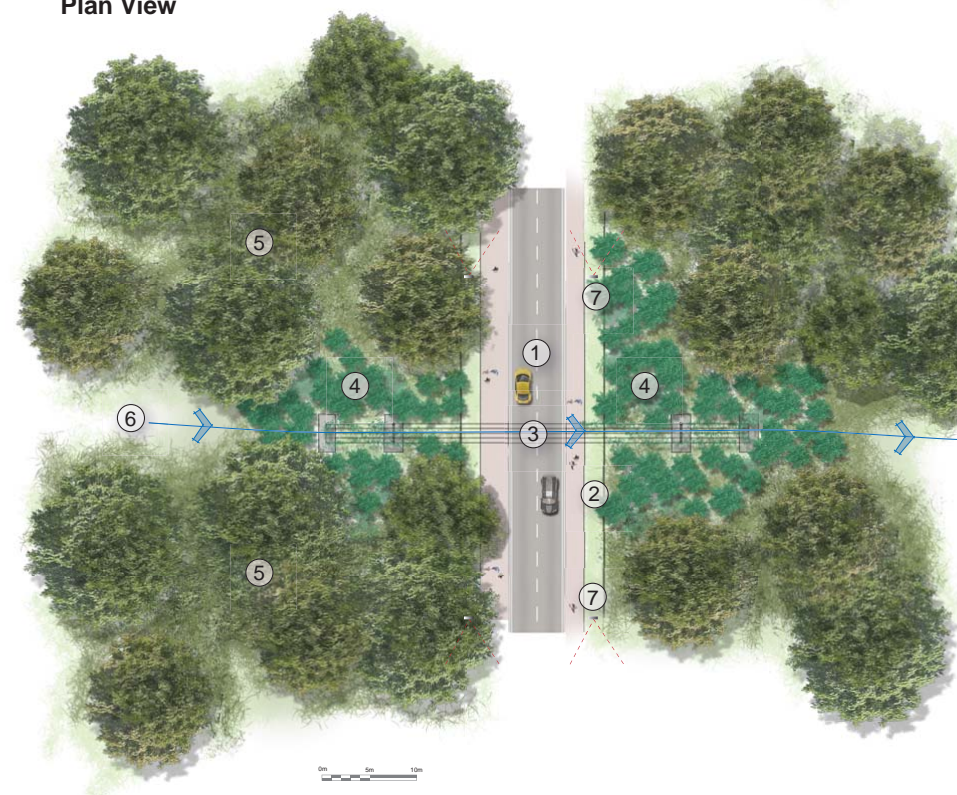
Shrubs

Goarse *Ulex europaeus*, Broom *Cytisus scoparius*, Spindle *Euonymus europaeus*, Hawthorn *Crataegus monogyna* and Blackthorn *Prunus spinosa*

Climbers

Old mans beard *Clematis vitalba* and honeysuckle *Lonicera periclymenum*

Plan View



Legend

- ① 6-6.5m carriageway with 3m footway/cycleway and 2m cycleway
- ② 2m grass verge/maintenance strip
- ③ Wire gantry structure
- ④ Bat mitigation tree planting to extend and merge with existing woodland fringe and extend to roadside maintenance verge
- ⑤ Existing mature mixed deciduous broadleaf woodland
- ⑥ 5m wide ride/clearing to guide bats Towards crossing
- ⑦ Shrouded lighting directed away from gantry structure
- ➔ Bat flight path

Sectional Elevation: Shows Planting at Year 1



Bat Crossing Type B: Indicative 'Hop Over' Crossing

The 'hop over' crossing method entails extensive tree planting which is to be allowed to develop to form a dense canopy that will, in time, bridge the carriageway.

The new carriageway will be designed to run as close as possible to existing mature broadleaf woodland so that the tree canopy will extend partially across the road from the outset. A 'no dig' solution may need to be agreed upon to achieve this and will be subject to the approval of appointed highways engineers and arboriculturalists.

Both the shared cycle/footway and the footway are to deviate away from the route of the main carriageway at the 'hop over' point in order to minimize the gap between the existing tree canopy and new tree planting.

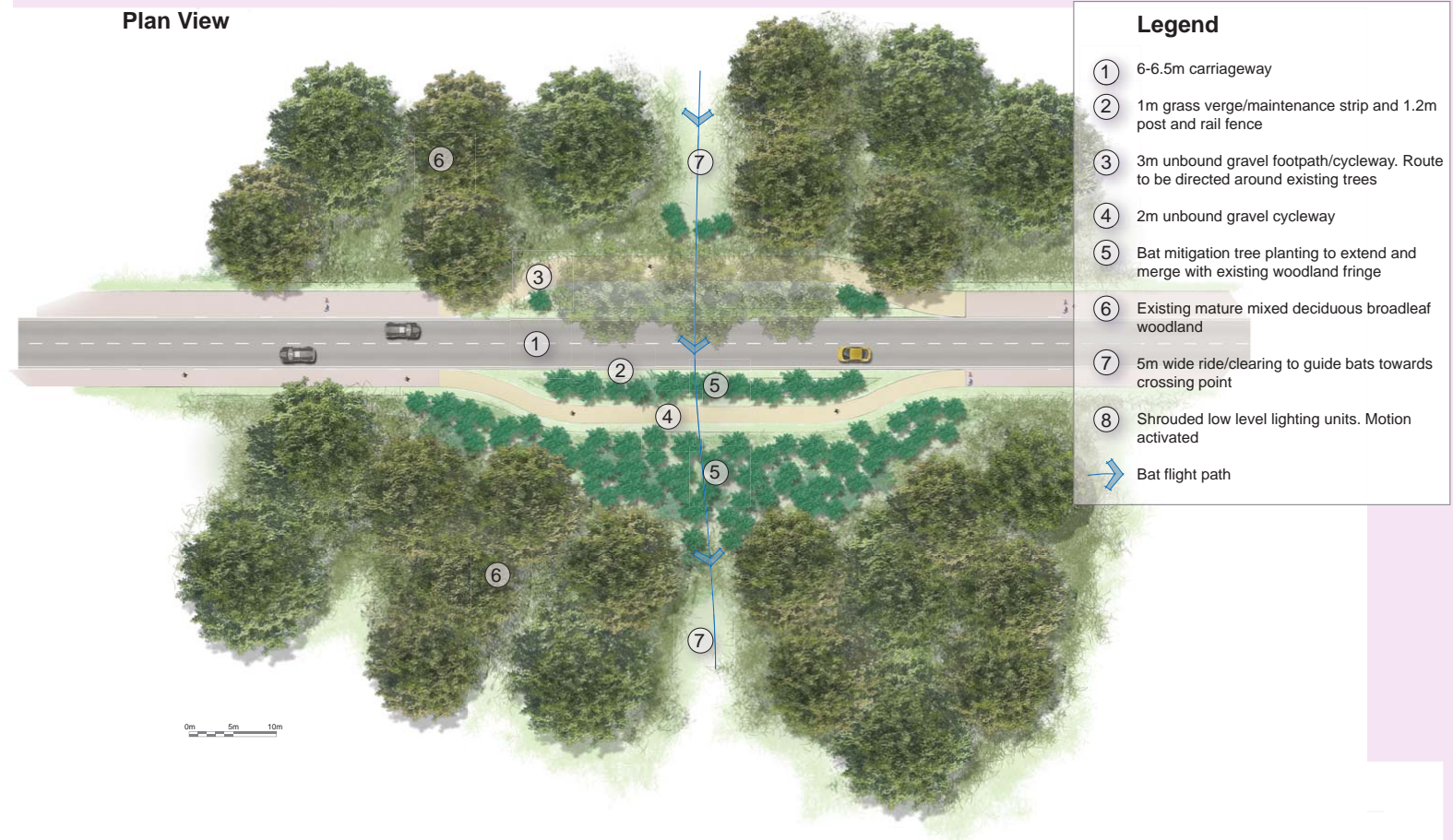
Tree specific species, density and ratios to be submitted to the Forest of Dean District Council for approval. Planting should include trees ranging in size from 8-10cm girth feathered 300-350cm high, to 20-25 cm girth semi mature 425 - 600 cm high.

Indicative plant list:

Trees

English Oak *Quercus robur*, Ash *Fraxinus excelsior*, Beech *Fagus sylvatica*, Common Alder *Alnus glutinosa*, Silver Birch *Betula Pendula*, Norway spruce *Picea abies*, Wild Cherry *Prunus avium*, European Larch *Larix decidua* and Hawthorn *Crataegus monogyna*.

Plan View



Legend

- ① 6-6.5m carriageway
- ② 1m grass verge/maintenance strip and 1.2m post and rail fence
- ③ 3m unbound gravel footpath/cycleway. Route to be directed around existing trees
- ④ 2m unbound gravel cycleway
- ⑤ Bat mitigation tree planting to extend and merge with existing woodland fringe
- ⑥ Existing mature mixed deciduous broadleaf woodland
- ⑦ 5m wide ride/clearing to guide bats towards crossing point
- ⑧ Shrouded low level lighting units. Motion activated
- ➔ Bat flight path

Sectional Elevation: Shows Planting at Year 1



Bat Crossing Type C: Indicative Culvert/Tunnel Crossing

Crossing point C consists of a 2m diameter culvert/tunnel under the proposed carriageway. Tree planting will range from semi mature trees abutting the existing woodland fringe to low scrub planting on the grassed carriageway embankment to aid in guiding bats through the tunnel. Shrouded lighting units will help to encourage bats through the tunnel and deter them from crossing above the carriageway

Indicative Planting List:

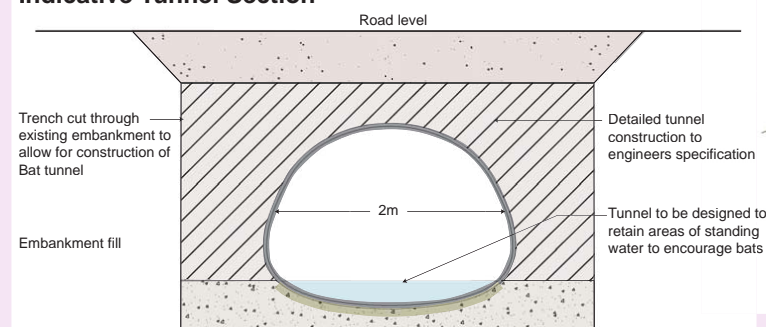
Trees

English Oak *Quercus robur*, Ash *Fraxinus excelsior*, Beech *Fagus sylvatica*, Common Alder *Alnus glutinosa*, Silver Birch *Betula Pendula*, Norway spruce *Picea abies* and European Larch *Larix decidua*.

Shrubs

Goarse *Ulex europaeus*, Broom *Cytisus scoparius*, Spindle *Euonymus europaeus*, Hawthorn *Crataegus monogyna* and Blackthorn *Prunus spinosa*

Indicative Tunnel Section



Plan View



Legend

- ① 6-6.5m carriageway with 3m footway/cycleway and 2m cycleway
- ② 2m grass verge/maintenance strip and 1.2m post and rail fence
- ③ Grassed embankment (gradient no steeper than 1:3) with low scrub planting to include species such as Goarse, Broom and Spindle (refer to plant schedule)
- ④ Bat mitigation tree planting to extend and merge with existing woodland fringe
- ⑤ Existing mature mixed deciduous broadleaf woodland
- ⑥ 5m wide ride/clearing to guide bats towards tunnel
- ⑦ Drainage ditch
- ⑧ Culvert/tunnel
- ⑨ Shrouded lights to create dark entrance to culvert
- ➔ Bat flight path

Sectional Elevation: Shows Planting at Year 1

