

Gravesham Borough Council

Appendix 1c

5. Gravesham - Design Principles – Green Bridges

As an Action Point from ISH11, Gravesham Borough Council is to provide alternative/ additional wording for the Design Principles (including Principle STR.08) (REP7-140/141) which, in its view, would better ensure robust/ ambitious landscape connectivity would be achieved from the Green Bridges.

The context for this amendment is a recognition of the need for a landscape-scale response to the scale of harm resulting from the project. The increased severance of the KDAONB as a result of the widened road corridor, will fragment the landscape and visually separate the landscape of the KDAONB. The setting of the KDAONB will be permanently changed by the large-scale and multi-level road junction to the immediate west of the AONB, as well as from the loss of Gravel Hill Wood, close to the AONB western boundary. The combination of changes due to the project will sever the cohesive wooded landscape of the Kent Downs AONB, resulting in a loss of integrity of the landscape, and a permanent change to landscape character. It is also our view that the project will alter how this part of the AONB is regarded for the longer term.

Due to the restricted width of the transport corridor, there are limited options for further mitigation within the KDAONB. Well-designed, large scale green bridges offer scope to provide mitigation for, inter alia, landscape severance.

Gravesham Borough Council has drafted the following amendments to the Design Principles (Doc REP7-140) for consideration.

STR.08 Green bridges

Green bridges are required mitigation for effects of the project, which include:-

- the severance and fragmentation of landscape, habitats and access,
- impact on landscape character,
- real and perceived effects on users, including visual impact, noise and the change in scale.

The multi-functional green bridges will be defined in accordance with the Landscape Institute's Green Bridges Technical Guidance Note 09/2015 and will provide continuity and enhancement of landscape character, connectivity of habitats, access connections into wider networks, and an enhanced user experience for those using the crossing and living in the immediate area of the Project (including WCH) and will retain the character of the local roads and routes.

The design of the green bridges shall be further developed during detail design, and will ensure:

- Connectivity of habitats for wildlife,
- The maximum possible width of green bridge to provide continuity and enhancement of landscape character,
- The development of design features to provide a resource for certain species, and to maximise the provision of ecosystem services,

- Planting shall be appropriate to local requirements and the broader landscape to ensure connectivity, ecological connections and enhanced user experience,
- The soil depth will be suitable to accommodate woodland trees,
- Protection of users from the visual and noise effects of the project,
- Development of a monitoring plan for ongoing monitoring of the effectiveness of the structures in terms of both access and wildlife connectivity.

The following bridges shall be green bridges:

- Brewers Road green bridge (Work No. 1D)
- Thong Lane green bridge south (Work No. 1H)
- Thong Lane green bridge north (Work No. 3B)
- Muckingford Road green bridge (Work No. 6B)
- Hoford Road green bridge (Work No. 6C)
- Green Lane green bridge (Work No. 7M)
- North Road green bridge (Work No. 8D)

Subject always to the constraints set out in the DCO, the design of green bridges shall be developed to achieve the criteria as set out, and to support the successful establishment of the planting typologies as shown on the Environmental Masterplan (Application Document 6.2, Figure 2.4) and as defined in the outline Landscape and Ecology Management Plan (oLEMP) (Application Document 6.7), and will be guided by 'Green Bridges Technical Guidance Note 09/2015 – Landscape Institute' and 'Natural England Commissioned Report NECR181 Green Bridges: A literature review (July 2015)'

Green bridge planting shall be designed to be planted as closely as possible to the bridge parapet edge on both sides of the bridge, while also minimising the chance of landscape planting falling onto the operational highway below. Any utility requirements shall be integrated within the structural outline (e.g., not hung and exposed). The minimum widths of planting zones are defined in the bridge-specific principles below.

S1.04 Brewers Road green bridge (Work No. 1D) and Thong Lane green bridge south (Work No. 1H)

The green bridges shall be provided for the replacement of Thong Lane south and Brewers Road crossings, and will connect habitat, extend the landscape character of the KDAONB, lessen the visual impact of the M2/A2/A122 Lower Thames Crossing junction, enhance the user experience and maintain north-south connectivity. The green bridges will be mixed use, as defined by the L.I. Technical Guidance, with key functions to include landscape integration, wildlife connectivity, vehicular access and WCH use. The range of functions together with the need for separation between wildlife and human access will determine the size of the green bridges. The green bridges shall be designed to meet the following criteria:

- To provide close connections and connectivity of habitats to the north and south of the green bridges for species including dormice, badgers, reptiles, bats and great crested newts between

Shorne Woods and Ashenbank Woods, Jeskyns and Cobham Park. The green bridges shall be designed to provide continuity of habitat between the bridges along the main highway's corridor as far as possible.

- The widths of the green bridges should reflect the differing needs of each of the functions, and be no less than those recommended in the guidance (at STR.08). See also S1.17 and S2.12
- To act as local landmarks and to signal entry into the Kent Downs AONB for drivers, the woodland vegetation on the bridges shall be visible on the horizon on their approach to the area from the east for Brewers Road green bridge, and from the west for Thong Lane green bridge south, and form a continuous, dense, wooded landscape across the transport corridor.
- To provide a bridge with soil depth suitable to establish woodland planting, including tree species, in accordance with the surrounding character and species makeup of the Kent Downs AONB. A variation in soil depths can be used to create a mosaic of vegetation.
- To provide a high-quality experience for users crossing the bridge through vegetation and woodland planting. The green bridge shall improve recreation access across the A2/M2/Lower Thames Crossing corridor.
- Connect and enhance the unique landscape character of the KDAONB, through the planting of a continuous belt of woodland planting, using local species composition to directly connect habitat and provide visual integration to enhance the wider landscape; connecting with woodland planting to the edge of Gravesend in the west and to Shorne Woods Country Park in the east as part of a wider 'wooded circle' connecting Shorne Woods and Claylane Wood, and reconnecting cultural links and reinforcing and protecting a sense of place.

The specific Design Principles for Brewers Road green bridge (S1.17) and Thong Lane green bridge south (S2.12) have been updated by the Applicant (REP7-140/141). The updates comprise the combining of the two planting areas on the east and west sides of the bridges into one planting area for each bridge. The total width of planted area for each bridge is the same as in earlier versions, with no additions. It is unclear what the benefits of this change will be.

With reference to the Landscape Institute Guidance, for mixed use green bridges the width of paved areas should be added to the green element to give the total width of the bridge. The proposed widths of the green elements of these green bridges falls below the minimum 20metres in width for habitat provision (in addition to any access elements) and the recommended 50-80metres for landscape and species connectivity.

In addition, due to the noise and visual intrusion of the widened road corridor, the green bridges across the A2 should be designed with the recreational user element (WCH users) towards the centre of the bridge, with a good example being Scotney Castle bridge over the A21.

Gravesham Borough Council has drafted the following amendments to the Design Principles.

S1.17 Brewers Road green bridge (Work No. 1D)

The following minimum widths shall apply in accordance with S1.04, STR.08 and STR.16:

- The planting green zones shall be maximised. Their width shall vary across the length of the bridge but shall have a 7m minimum width at pinch points. A minimum of 20m up to 50m width planting zone to be divided between the east and the west arranged around the WCH and carriageway provision;
- WCH provision, comprising a 3m shared pedestrian/cycle route and a 3.5m horse riding route.

S2.12 Thong Lane green bridge south (Work No. 1H)

The following minimum widths shall apply in accordance with S1.04, STR.08 and STR.16:

The planting green zones shall be maximised. Their width shall vary across the length of the bridge but shall have a 7m minimum width at pinch points. A minimum of 50m up to 80m width planting zone to be divided between the east and the west arranged around the WCH and carriageway provision; • WCH provision, comprising a 3m shared pedestrian/cycle route and a 3.5m horse riding route.