10. Visual Effects

10.1. Introduction

10.1.1. Visual impact assessment is the systematic identification of the visual receptors (people) most likely to be affected by the Proposed Scheme and the description of the change in their experience as a result of the Proposed Scheme.

10.1.2. Visual receptors typically include residents, users of local roads and other infrastructure including footpaths, and recreational users within the defined study area.

10.1.3. This chapter identifies and assesses the existing visual receptors within the identified study area. It is supported by Volume 4, Appendix A10.1 Visual Effects Methodology. It is also supported by Volume 3, Figure 10.1 Viewpoint Locations, Figure 10.2 Zone of Theoretical Visibility (ZTV), Figure 10.3 Viewpoint Photographs and Figure 10.4 Photomontages.

10.2. Approach and Methods

10.2.1. The assessment has been carried out in accordance with Design Manual for Roads and Bridges (DMRB) LA 107 - Landscape and visual effects and DMRB LA 104 - Environmental assessment and monitoring, and the Landscape Institute and Institute of Environmental Management, Guidelines for Landscape and Visual Impact Assessment 3rd Edition, Routledge (GLVIA3).

10.2.2. The approach and methods have been informed by legislation, policy and guidance. A full list of those that are most relevant to visual assessment in the study area are contained in Volume 4, Appendix 9.1 Legislation, Policy and Guidance.

Study Area

10.2.3. The study area for the visual assessment extends to 3km as shown in Volume 3, Figure 10.1 Viewpoint Locations. It is informed by the ZTV (Volume 3, Figure 10.2 Zone of Theoretical Visibility), and field study assessment and was agreed with Loch Lomond and The Trossachs National Park Authority (LLTNPA) at the Scoping stage.

Method of Baseline Collection

10.2.4. The assessment was undertaken by two Chartered Landscape Architects. The baseline information has been collated from desk study including consideration of the landscape designations, residential properties, the Core Paths and way-marked routes network, Listed Buildings, Ordnance Survey (OS) marked viewpoints and ZTV mapping (Volume 3, Figure 9.2 Landscape Designations and Volume 3, Figure 10.2 Zone of Theoretical Visibility). Site visits confirmed actual visibility and any other likely visual receptors not identified during the desk study.

10.2.5. The Lighting ZTV is informed by the illuminance i.e. 5 lux lighting directed within the DFS and illuminance i.e. the light reflected off the built surfaces of the road and retaining walls. It is based on the inverse square law which sets out the indicative light factor of maximum brightness. The thresholds and distances for this are given in Figure 10.2 Lighting ZTV. In effect this means that while lighting associated with the DFS will be perceptible from a given distance, it will be increasingly dimmer as the viewer moves away from the source.

Consultation

10.2.6. Consultation was undertaken throughout the DMRB Stage 2 and DMRB Stage 3 process through the Environmental Steering Group (ESG) which comprised, in relation to visual effects, LLTNPA and Scottish Forestry.

10.2.7. Public consultation at DMRB Stage 2 was undertaken between 02 June and 28 July 2023 which included four days of public exhibitions in Arrochar and Lochgilphead in June 2023 and the virtual exhibition online. Further consultation was undertaken at DMRB Stage 3 between 18 March and 10 May 2024 both online and at public exhibitions. Together these helped identify what the public valued about the landscape and visual amenity of the area.

10.2.8. During the 2023 consultation, eight of the respondent's comments specifically focused on the 'drama' and/or scenic views from the proposed Debris Flow Shelter (DFS) and/or towards the proposed DFS. Two responses stated that a green roof on the DFS was important visually. Two responders stated the 'gateway' experience to Argyll and Bute was of importance.

10.2.9. During the 2024 consultation, there were 97 responses in total comprising 53 on the online survey, 33 through the public exhibition questionnaire and 11 from emails. The questionnaire contained a specific question (question 3) which was set to identify what the public considered to be of value in the landscape at the A83 Rest and Be Thankful (RABT). The questionnaire results were generally split between the scenery/views being most important (17 responses) and the landscape fit of the Proposed Scheme (21 responses). Of the latter, eight respondents stated a green roof would be important to blending the proposed DFS to the landscape. Seven responded that the DFS could be an iconic engineering opportunity. Three stated trees/native trees were important, two specifically noted the existing rock outcrop located at the northern extents of the RABT pass was important and one respondent mentioned prevention of light pollution as being important.

Assessment Methodology

10.2.10. The design vision is one where the landscape will accommodate the changes in balance with the retention of existing views and visual amenity. The landscape design objectives are to respect the landscape character and the cultural and social aspects of the landscape, to minimise any impact on the Special Landscape Qualities and consider opportunities to enhance these, and to input to the design quality of the new elements.

10.2.11. In accordance with DMRB LA 107 and LA 104 and GLVIA3, the assessment has considered the sensitivity of the visual receptors and the magnitude of impact of the Proposed Scheme on them. This has led to a determination of the significance of effect of the Proposed Scheme on these receptors. The methodology can be found in Volume 4, Appendix 10.1 Visual Methodology.

Limitations of the Assessment

10.2.12. The assessment was predominantly undertaken from publicly accessible locations. Where access to private land was required, this was agreed in advance of the assessment.

10.2.13. Where safe access to a viewpoint location was not possible, an alternative viewpoint nearby was selected to ensure that all visual receptors agreed at Scoping stage were represented. This is the standard approach for visual assessment and is not considered to materially affect the outcome of the assessment undertaken.

10.2.14. Signage has not yet been confirmed for the OMR and has not been included in the photomontages. It is anticipated that there will be a small number of repeater speed limit signs, a handful of warning signs in relation to Glen Croe Farm operations and potentially some permanent signs on hinge boards at either end which can be opened/closed as required in place of temporary signage when a diversion is in place. The inclusion of deer fencing has not been confirmed, and as such, it is not included as part of this assessment.

10.3. Baseline Conditions

Visual Receptors

10.3.1. The number of visual receptors within the study area is constrained by the topography and primarily consists of users of the A83 route and the B828 Glenmore, as well as outdoor receptors, including those utilising recreational routes and the RABT car park. There are only two residential properties in Glen Croe, only one of which is occupied.

10.3.2. The Old Military Road (OMR) runs in close proximity to the A83 and is a feature in the view for many receptors. The mountain peaks are the focus of the view for all visual receptors with Loch Restil being a key feature in views along part of the A83 and on the B828 Glenmore near the RABT car park.

Viewpoints

10.3.3. Within the study area 11 viewpoints were identified representing a range of visual receptors. Visual receptor sensitivity is given for each of the user types (refer to Volume 4, Appendix 10.1 Visual Methodology). The sensitivity rating is given in Section 10.5, Table 10.1. All viewpoints are within the LLTNP.

10.3.4. GLVIA3 recognises three types of viewpoint:

- Representative: selected to represent the experience of different types of visual receptor, where large numbers of viewpoints cannot all be included individually and where significant effects are unlikely to differ – for example, certain points may be chosen to represent the views of users of particular public footpaths.
- Specific: chosen because they are key and sometimes promoted viewpoints within the landscape, including for example specific local visitor attractions, viewpoints in areas of particularly noteworthy visual and/or recreational amenity such as landscapes with statutory landscape designations, or viewpoints with particular cultural landscape associations.
- Illustrative: chosen specifically to demonstrate a particular effect or specific issues, which might, for example, be the restricted visibility at certain locations

10.3.5. The frequency, range and duration of the view may vary. Often, the selected viewpoints represent more than one type of receptor. These elements will differ depending on whether the receptor is stationary or in motion for example.

10.3.6. An additional viewpoint (Viewpoint 10: Beinn an Lochain) was requested by LLTNPA at Scoping and has been included in the assessment. Viewpoint 2: OMR was not accessible during the site assessment and Viewpoint 3: Core Path had no actual visibility. Therefore, Viewpoint 3A: Core Path was selected as being representative of both (refer to Volume 3, Figure 10.1 Viewpoint Locations).

Future Baseline

10.3.7. In the absence of the Proposed Scheme, there will be ongoing interventions on the slopes and traffic management interventions including diversions to the OMR.

Sub-Topics Scoped Out of the Assessment

10.3.8. As agreed at Scoping all visual receptors with the potential for significant visual effect have been scoped in. Of the 10no. viewpoints identified in the Scoping Report, two were found to have no views of the Proposed Scheme during site assessment (Viewpoint 1: Laigh Glencroe and Viewpoint 9: Butterbridge – refer to Volume 3, Figure 10.1 Viewpoint Locations). No further assessment was made on these receptors, and they are not included in Table 10.1.

10.4. Embedded Mitigation

10.4.1. The alignment of the Proposed Scheme has been developed through an iterative design process involving both engineering and environmental specialists through numerous design iterations. Each of these iterations has been informed and reviewed by landscape specialists to reduce potential visual impacts. This is embedded mitigation and, in relation to the visual assessment, has been undertaken throughout the design process in the following ways:

- LV-Embed 1 DFS: The Debris Flow Shelter has been designed to include a green roof to help blend the DFS to the landscape
- Through further development at the next stage, and with engagement with the LLTMPA, Transport Scotland will design and, where necessary, specify measures for the Appointed Contractor to improve the aesthetics of the DFS (such as the slanted piers) (Volume 3, Figure 10.4 Photomontages shows both pier styles).
- LV-Embed 2 Sustainable Drainage Systems (SuDS): Bund slope gradients have been designed to be varied and make the SuDS features as naturalistic as possible and will be agreed with the Environmental Clerk of Works, and
- LV-Embed 3 RABT Car Park: conceptual design developed to retain open views for users of the A83 (refer to Volume 3, Figure 9.4 Rest and Be Thankful Car Park Concept Design).

- LV-Embed 4 HESCO Barrier: The HESCO barrier extension will match the colour of the existing HESCO barrier as far as possible.

10.5. Potential Impacts

Construction Impacts

10.5.1. During construction changes to the view would occur due to:

- piling activity
- temporary stabilisation measures for protection of workforce – rock debris wall fences
- removal of vegetation to facilitate works resulting in bare earth due to the removal of vegetation and earthworks
- changes in landform due to earthworks, including temporary soil storage areas
- vehicle activity due to excavation, earthmoving and construction
- construction of the DFS, retaining walls, deflection walls and other structures including a bridge and culverts
- construction of the maintenance access and utility buildings
- construction of the car parking and bus stop area
- construction of the active travel route parallel to the B828 Glenmore
- creation of the reconfigured junction between the B828 Glenmore and A83
- creation of the SuDS drainage features
- extension to the HESCO bund and widening of bends on the OMR
- installation of new signage
- site compound areas, storage of materials and lighting to facilitate work during hours of darkness and
- traffic management systems.

Operational Impacts

10.5.2. Potential impacts for the Proposed Scheme are described during operation in the Winter of Year 1 (WY1) and the Summer of Year 15 (SY15). The visual effects associated with the Proposed Scheme include (but are not limited to):

- Formation of rock cuts
- Localised area of stabilisation measures
- changes to views or visual amenity as a result of the addition of new man-made built features and elements
- changes to views or visual amenity as a result of the addition of new permanent engineering safety measures (rock debris fall fences, mesh, DFS and associated catch pits and catch pit protection walls and maintenance access, retaining walls, deflection walls and maintenance access and HESCO bund extension)
- changes to views or visual amenity due to removal of landscape elements and/or features such as woodland or trees, and
- changes to views or visual amenity as a result of lighting associated with the DFS.

10.5.3. Effects on visual receptors during construction and operation are set out in Table 10.1 - Visual Effects.

Table 10.1 - Visual Effects

Visual Receptor, Sensitivity, Description, Magnitude of Impact	Construction Effect	Significance of Effect WY1	Significance of Effect SY15
Viewpoint 2: OMR (representative of users of the OMR). *Sensitivity: High (due to the value of the OMR).* The existing view looking north is along the OMR with the existing HESCO barrier in the foreground. The A83 is elevated to the west and the east of the glen has conifer forestry with open hill above. The Rest and Be Thankful pass is ahead and the hill summits form the backdrop. Construction activity would be evident with traffic management systems in place. The widening of the OMR, creation of the earth bund and the HESCO extension, new bridge, SuDS, culverts and localised widening of the bends would all be experienced in close proximity. The works on the A83 will be evident. The magnitude of change is major. During operation, the new elements of the bund and SuDS would be somewhat softened by seeding and scattered trees would help soften the A83. However, the bund, HESCO barrier and its extension and culverts would still be obvious in close proximity from this location. The DFS, including lighting, elevated above would be visible. The magnitude of change is moderate.	Very Large adverse	Large adverse	Large adverse
Viewpoint 3A: Forestry Path (representative of walkers on the path). *Sensitivity: High (due being in the LLTNP and representing people whose recreation is focused on the view).* The existing view towards the Proposed Scheme is across the glen with the three horizontal elements – the Croe Water, the OMR and the A83 crossing the view. Felled forestry coupes are evident in the foreground and the HESCO bund is noticeable in the mid-distance. The focus of the view is Beinn Luibhean and Ben Arthur (The Cobbler). Construction activity would be visible from the forest path and the OMR, including felling to facilitate the DFS and associated maintenance access, and the addition of those features. The formation of the SuDS feature and extension to the HESCO bund would be visible in closer proximity. The impact magnitude is predicted to be major for a temporary period. During operation, the new structural elements would be clearly visible. Lighting of the DFS would be a new element for the area but unlikely to be perceived as walkers are considered unlikely to be on the forestry path after dark. The impact magnitude is predicted to be moderate.	Large adverse	Moderate adverse	Moderate adverse

Visual Receptor, Sensitivity, Description, Magnitude of Impact	Construction Effect	Significance of Effect WY1	Significance of Effect SY15
Viewpoint 4: B828 (representative of users of the B828 Glenmore). *Sensitivity: Moderate (due to the high value through being in the LLTNP and representing road travellers with an awareness of the view).* The existing view towards the Proposed Scheme is of a 'plateau' in the foreground with a few communications masts. There are views along Glen Croe with the OMR and HESCO bund being noticeable elements. The A83 is a more noticeable element and traffic movement is perceptible. The focus of the view is Beinn Luibhean and Ben Arthur (The Cobbler) channelled down the glen floor with the OMR and Croe Water noted features. Construction activity would be clearly visible with the works to form the DFS, retaining wall at the west end of the DFS, and rock cutting operations being evident. Changes to the earthworks profile of the B828 Glenmore and the addition of the proposed active travel route will be seen in the foreground. The impact magnitude is predicted to be major for a temporary period. During operation the new structures would be evident in the foreground to mid distance of the view. Lighting would be a new element in the area. The focus of the near and mid view would be softened as tree growth establishes and the distance view would not change. The impact magnitude is predicted to be moderate.	Large adverse	Moderate adverse	Moderate adverse
Viewpoint 5: OMR at Glen Croe Farm (representative of residents of the farm and users of the OMR). *Sensitivity: High (resulting from high value through being in the LLTNP and representing people whose recreation is focused on the view and residents).* The existing view along Glen Croe from the OMR includes Glen Croe Farm, although views from the farm are partially screened by conifers. The A83 is noticeable from the farm and is noticeable and audible from the OMR. The HESCO bund and some fencing and engineering solutions to the landslides are elements in the view. The focus of the view is Beinn Luibhean, Ben Arthur (The Cobbler) and The Brack. Existing views from Glen Croe Farm to the Proposed Scheme are partially screened by conifer trees and outbuildings near the house. Construction activity for the A83 – the DFS, and retaining walls, would be evident. The impact magnitude is predicted to be major for a temporary period. During operation, lighting associated with the DFS would be a new element in the view, although only seen at an oblique angle from the farm house. The new structure elements may be perceptible from the house but only seen filtered views due to intervening vegetation in the property curtilages and outhouses. The new structure elements and lighting associated with the DFS would be clearly visible from the OMR. The impact magnitude is predicted to be moderate.	Large adverse	Moderate adverse	Moderate adverse

Visual Receptor, Sensitivity, Description, Magnitude of Impact	Construction Effect	Significance of Effect WY1	Significance of Effect SY15
Viewpoint 6: Rest And Be Thankful Car Park (representative of users of the car park and the listed Stone). *Sensitivity: Very high (due to the high value through being in the LLTNP and representing people whose recreation is focused on the view).* The existing view point is elevated within Glen Croe. The Croe Water and the OMR are elements on the glen floor with the A83 being a more noticeable element on north side of the glen. Conifer forestry plantation makes up much of the southern side slopes. The focus of the view is Beinn Luibhean, Ben Arthur (The Cobbler) and The Brack with channelled views along Glen Croe where the OMR and Croe Water are features Construction activity to facilitate the improvements to the car park, the new active travel route and the B828 Glenmore / A83 junction would have a direct impact on the car park area. Rock cuts, the construction of the DFS and retaining wall, deflection walls, and culverts would be visible in close to mid-distance views. Creation of SuDS feature would be perceptible in the distance. The impact magnitude is predicted to be major for a temporary period. During operation, the view would include the new car park elements and structural features (DFS and retaining walls). Lighting of the DFS would be a new element. The changes would be seen in close and mid-distance views. The focus of the view would alter the experience of the view. The impact magnitude is predicted to be moderate.	Very Large adverse	Large adverse	Large adverse
Viewpoint 7: A83 Layby next to Loch Restil. *Sensitivity: Moderate (due to the high value through being in the LLTNP and representing road users with an awareness of the view).* This layby will be removed as part of the Proposed Scheme; however the location represents views of users of the A83 looking towards the Proposed Scheme (it not being safe to locate an alternative viewpoint on the southbound bend). Loch Restil is a feature of the existing view in the foreground, with the slopes of Beinn an Lochain and Beinn Luibheann rising either side of the A83. A small section of the B828 Glenmore and some telecoms masts are perceptible in the distance. The focus of the view is Ben Donich directly ahead making up a horizon of hills. Construction activity associated with the widening of the cutting on the B828 Glenmore would be perceptible in the distance. The impact magnitude is predicted to be moderate for a temporary period. During operation the changes would be barely perceptible due to the distance and would not alter the balance of the view. The impact magnitude is predicted to be minor adverse**.**	Moderate adverse	Slight adverse	Slight adverse

Visual Receptor, Sensitivity, Description, Magnitude of Impact	Construction Effect	Significance of Effect WY1	Significance of Effect SY15
Viewpoint 8: A83 Layby to the north of Loch Restil. *Sensitivity: Moderate (due to the high value through being in the LLTNP and representing road users with an awareness of the view)*. Loch Restil in the foreground is a feature of the existing view with the slopes of Beinn an Lochain and Beinn Luibhean rising either side of the A83. A small section of the B828 Glenmore and some telecoms masts are perceptible in the distance. The focus of the view is Ben Donich directly ahead making up a horizon of hills. Construction activity associated with the widening of the cutting on the B828 Glenmore would be perceptible in the mid-distance. The impact magnitude is predicted to be moderate for a temporary period. During operation the changes would be barely perceptible due to the distance and would not alter the balance of the view. The impact magnitude is predicted to be minor adverse.	Moderate adverse	Slight adverse	Slight adverse
Viewpoint 10: Beinn an Lochain (walkers on waymarked trail). *Sensitivity: Very high (due to the high value through being in the LLTNP and representing people whose recreation is focused on the view).* The existing view point is an elevated panorama. Below is Loch Restil and Glen Croe. The A83 and B828 Glenmore are both readily perceptible. The OMR and Croe Water are also perceptible. Existing engineering solutions on the A83 and OMR are not easy to distinguish from this distance and elevation. Glen Croe Farm is perceptible due in the main to its white render. The focus of the view is undoubtably the array of 'Arrochar Alps' which extend to the horizon to include Ben Lomond and beyond as far as the eye can see. Construction activity would be noticeable but at this elevation would not detract from the focus of the view. The impact magnitude is predicted to be moderate for a temporary period. During operation the changes would be barely perceptible in the view. The green roof on the DFS would have established. The focus of the view would not change. Lighting associated with the DFS is likely to be barely perceptible at this distance. The impact magnitude is predicted to be minor.	Large adverse	Moderate adverse	Moderate adverse

Visual Receptor, Sensitivity, Description, Magnitude of Impact	Construction Effect	Significance of Effect WY1	Significance of Effect SY15
Viewpoint 11: Ben Donich (walkers on trail within LLTNP). *Sensitivity: Very high (due to the high value through being in the LLTNP and representing people whose recreation is focused on the view)*. The existing view point is elevated opening out above the forestry tree line. The land drops away in the foreground to Glen Croe below. Glen Croe Farmhouse is noticeable in the view with its white render. The OMR, A83 and B828 Glenmore are all elements, with Loch Restil a feature in the mid-distance. Beinn Luibhean and Beinn An Lochain comprise the near horizon with The Cobbler (Ben Arthur) and other hills beyond making up the distant horizon and the focus of the view. Construction activity would be evident across the entire mid-distance of the view span. The impact magnitude is predicted to be major given that Beinn Luibhean is centrally the focus of the view. This would be for a temporary period. During operation the new elements including the DFS, retaining walls, and extensions to the HESCO bund would be noticeable. Lighting associated with the DFS will be perceptible. The SuDS feature would not be perceptible due to topography and distance. The impact magnitude is predicted to be moderate.	Very Large adverse	Large adverse	Large adverse
Sequential Views: The A83 is High sensitivity due to being within the LLTNP and a recognised scenic coastal route. Existing views northbound and southbound are restricted to the west by the slopes of Beinn Luibheann. Views northbound are eastwards across Glen Croe to the slopes of Ben Donich and ahead to the Rest and Be Thankful with Beinn an Lochain beyond. Beyond the pass is Loch Restil. Views for southbound road users take in Loch Restil, and on emerging from the pass and the Rest and Be Thankful area, the views are across and along Glen Croe and eastwards to Ben Donich with 'Arrochar Alps' forming the skyline though there are also stretches of restricted views due to trees. During construction A83 road users will be diverted to the OMR and therefore there will be no views from the A83. Views from the OMR will be at a lower elevation than the A83 but construction activity on the A83 will be visible. The magnitude of impact is minor in the context of the baseline frequency of diversions to the OMR. During operation the experience of the A83 road user will be different as they will be approaching and then within the DFS so that the views will be slightly more restricted than existing for a short section of the route. The magnitude of change is moderate.	Moderate adverse	Large adverse	Large adverse

Visual Receptor, Sensitivity, Description, Magnitude of Impact	Construction Effect	Significance of Effect WY1	Significance of Effect SY15
Landscape Legislation, Policy and Plans: The sensitivity is considered to be high given the value of the landscape to which the legislation, policy and plans applies. The visual assessment complies with NPF4 in that the objectives and integrity of the LLTNP is not compromised. The LLTNP Local Development Plan aims to safeguard visual amenity and important views and protect and enhance the landscape character. The Proposed Scheme does impact on visual amenity and there are changes to views as set out above. However, the important views up and down Glen Croe and from the Rest and Be Thankful OS mapped viewpoint are retained. The methodology for the LVIA is informed by the DMRB and GLVIA3. The magnitude of impact is no change to negligible.	Neutral	Neutral	Neutral

10.6. Mitigation

10.6.1. Mitigation falls into three categories - prevention, reduction and off-setting. Mitigation proposals have been developed in accordance with Transport Scotland's Fitting Landscapes: Securing more Sustainable Landscape (2014) and the SLQs of the LLTNP.

10.6.2. Embedded mitigation is set out in Section 10.4.

10.6.1. Standard construction phase mitigation measures are covered in Table 9.2 of the landscape chapter and are not repeated here. Mitigation is shown in Volume 3, Figure 9.3 Landscape and Ecological Mitigation.

Table 10.2 - Mitigation Measures

Mitigation Reference	Mitigation Measures
LV1	Construction activity will be kept to the minimum practicable time to reduce the duration of impacts. Areas will be cleared for construction as close as possible to the works commencing, and topsoiling, reseeding and planting will be undertaken as soon as possible after the works are complete, allowing for the appropriate planting/seeding season.
LV2	Work compound and storage areas will, as far as practicable, be located where existing features can provide screening.
LV3	Construction areas will be kept tidy and free of litter and debris.
LV4	Work will be avoided during hours of darkness as far as is practicable and where necessary, directed lighting will be used to minimise glare.

Mitigation Reference	Mitigation Measures
LV5	To protect soil quality: • uncontaminated topsoil for re-use shall be stored in un-compacted mounds up to 2m in height separate from subsoil material • stripped topsoil shall be used in areas of the same vegetation type and • subsoil in proposed planting areas shall be replaced after construction and ripped to a depth agreed with the Environmental Clerk of Works, landscape architect or soil scientist, as appropriate, prior to topsoiling and planting.
LV6	Minimise loss of all existing vegetation as far as practicable. Retained existing trees and vegetation shall be incorporated with new planting proposals. Trees shall only be removed where it can be demonstrated that this is required for construction or safety purposes.
LV7	Fence off existing trees and shrubs not affected by construction with a suitable type of protective fencing which shall extend to the root zone of the tree canopy and remain in situ until works are completed. Adhere to BS 5837:2012 trees in relation to design, demolition or construction.

Mitigation Reference	Mitigation Measures
LV8	Earthworks/Rock cut proposals will: • use retaining walls where appropriate to avoid extensive cuttings into slopes or large embankments which increase land disturbance • where rock cuttings are required, create formations which are varied and reflect the structure of the rock • rock cutting shall incorporate embayments, vary the height of ledges, and utilise bunds in the crest of benches to contain rockfall, either alone or in combination, to achieve an irregular and naturalistic appearance • the use of mesh shall be avoided and • sensitive grading of earthworks to integrate with surrounding landform and/or reduce requirement for/extent of felling.
LV9	Earthworks will be steepened at the maintenance access to the DFS area to reduce felling.
LV10	Lighting will be minimised and designed to be as contained as possible within the confines of its purpose for safety.
LV11	Rest and Be Thankful car park – materials used, road surfacing treatment, and road markings will respect the landscape setting of the Rest and Be Thankful Stone (Category C Listed Building)

Mitigation Reference	Mitigation Measures
LV12	Mitigation planting to replace trees lost during the construction of the Proposed Scheme. Planting shall aid integration with the landscape character and be based on native species established in the area. Planting density shall be light to align with landscape character or to afford open or glimpsed views of landscape features. Species-rich mixes used for the majority of grass verges with the aim of integrating these into the wider landscape character. The exception to this will be the use of low nutrients and suitable low growing, local grass species in areas associated with visibility splays which are capable of withstanding regular cutting. Please refer to Volume 3, Figure 9.3 Landscape and Ecological Mitigation.
LV13	The detail of any required mammal fencing shall be designed to minimise landscape and visual impact.
LV14	The detail of the lighting shall utilise luminaires selected to avoid upward light.

10.7. Residual Effects

Residual Effects – Construction

10.7.1. Effects remaining after mitigation is in place are termed residual effects. There are eight visual receptor types represented by eight viewpoints referenced in Table 10.1. All eight receptors have been identified as having likely significant residual effects during the construction period as set out in Table 10.2 - Residual Effects Construction. Even with best construction practices (see Table 10.2) there would be residual effect remaining due to the nature, scale and duration of the construction period.

Table 10.3 - Residual Effects Construction

Viewpoint Reference	Pre-Mitigation Effect Magnitude	Pre-Mitigation Effect Significance	Mitigation Measures	Post-Mitigation Effect Magnitude	Post-Mitigation Effect Significance
VP2	Major	Very Large	LV1-7 will ensure construction impacts are avoided, prevented or reduced. However, due to the scale of works there will be significant impact remaining as per the magnitude criteria banding.	Major	Very Large

Viewpoint Reference	Pre-Mitigation Effect Magnitude	Pre-Mitigation Effect Significance	Mitigation Measures	Post-Mitigation Effect Magnitude	Post-Mitigation Effect Significance
VP3A	Major	Large adverse	LV1-7 will ensure construction impacts are avoided, prevented or reduced. However, due to the scale of works there will be significant impact remaining as per the magnitude criteria banding.	Major	Large adverse
VP4	Major	Large adverse	LV1-7 will ensure construction impacts are avoided, prevented or reduced. However, due to the scale of works there will be significant impact remaining as per the magnitude criteria banding.	Major	Large adverse
VP5	Major	Large adverse	LV1-7 will ensure construction impacts are avoided, prevented or reduced. However, due to the scale of works there will be significant impact remaining as per the magnitude criteria banding.	Major	Large adverse

Viewpoint Reference	Pre-Mitigation Effect Magnitude	Pre-Mitigation Effect Significance	Mitigation Measures	Post-Mitigation Effect Magnitude	Post-Mitigation Effect Significance
VP6	Major	Very Large adverse	LV1-7 will ensure construction impacts are avoided, prevented or reduced. However, due to the scale of works there will be significant impact remaining as per the magnitude criteria banding.	Major	Very Large adverse
VP7	Moderate	Moderate adverse	LV1-7 will ensure construction impacts are avoided, prevented or reduced. However, due to the scale of works there will be significant impact remaining as per the magnitude criteria banding.	Moderate	Moderate adverse
VP8	Moderate	Moderate adverse	LV1-7 will ensure construction impacts are avoided, prevented or reduced. However, due to the scale of works there will be significant impact remaining as per the magnitude criteria banding.	Moderate	Moderate adverse

Viewpoint Reference	Pre-Mitigation Effect Magnitude	Pre-Mitigation Effect Significance	Mitigation Measures	Post-Mitigation Effect Magnitude	Post-Mitigation Effect Significance
VP10	Moderate	Large adverse	LV1-7 will ensure construction impacts are avoided, prevented or reduced. However, due to the scale of works there will be significant impact remaining as per the magnitude criteria banding.	Moderate	Large adverse
VP11	Major	Very Large adverse	LV1-7 will ensure construction impacts are avoided, prevented or reduced. However, due to the scale of works there will be significant impact remaining as per the magnitude criteria banding.	Major	Very Large adverse
Sequential Views A83	Minor	Moderate adverse	LV1-4, LV-6 and LV-7 will ensure construction impacts are avoided, prevented or reduced. However, due to the scale of works there will be impact remaining as per the magnitude criteria banding.	Minor	Moderate adverse

Viewpoint Reference	Pre-Mitigation Effect Magnitude	Pre-Mitigation Effect Significance	Mitigation Measures	Post-Mitigation Effect Magnitude	Post-Mitigation Effect Significance
Legislation, Policy and Plans	No change to negligible	Neutral	LV1-7 will ensure construction impacts are avoided, prevented or reduced. However, due to the scale of works there will be impact remaining as per the magnitude criteria banding.	No change to negligible	Neutral

Residual Effects – Operation

10.7.2. During operation, eight visual receptors have been identified as having likely residual effects, six of them significant in the WY1. The reduction in significance level by SY15 is mainly due to the establishment of the green roof and mitigation planting so that only two visual receptor locations, VP6 and VP11, would have a residual significant effect at SY15 due to having very high sensitivity. This is set out in Table 10.3 - Residual Effects Operation.

Table 10.4 - Residual Effects Operation

Viewpoint Reference	Pre-Mitigation Effect Magnitude	Pre-Mitigation Effect Significance	Mitigation Measures	Post-Mitigation Effect Magnitude	Post-Mitigation Effect Significance
VP2	Moderate	WY1: Large adverse SY15: Large adverse	LV-10, LV-12, LV-13 will reduce the visual impact though it will remain significant due to the nature and scale of the new elements.	Moderate	WY1: Large adverse SY15: Large adverse
VP3A	Moderate	WY1: Moderate adverse SY15: Moderate adverse	LV-9, LV-10, LV-12, LV-13 will reduce the visual impact. LV14 will avoid significant impact.	Minor	WY1: Slight adverse SY15: Slight adverse
VP4	Moderate	WY1: Moderate adverse SY15: Moderate adverse	LV-10, LV-12, LV-13 will reduce the visual impact.	Minor	WY1: Slight adverse SY15: Slight adverse

Viewpoint Reference	Pre-Mitigation Effect Magnitude	Pre-Mitigation Effect Significance	Mitigation Measures	Post-Mitigation Effect Magnitude	Post-Mitigation Effect Significance
VP5	Moderate	WY1: Moderate adverse SY15: Moderate adverse	LV-10, LV-12, LV-13 will reduce the visual impact. LV14 will avoid significant impact.	Minor	WY1: Moderate adverse SY15: Slight adverse
VP6	Moderate	WY1: Large adverse SY15: Large adverse	LV-8, LV-10, LV-11, LV-12, LV-13 will reduce the visual impact. LV14 will avoid significant impact.	Minor	WY1: Moderate adverse SY15: Moderate adverse

Viewpoint Reference	Pre-Mitigation Effect Magnitude	Pre-Mitigation Effect Significance	Mitigation Measures	Post-Mitigation Effect Magnitude	Post-Mitigation Effect Significance
VP7	Minor	WY1: Slight adverse SY15: Slight adverse	LV-8, LV-11, LV-12 and LV-13 will reduce visual impact.	Negligible	WY1: Slight adverse SY15: Neutral
VP8	Minor	WY1: Slight adverse SY15: Slight adverse	LV-8, LV-11, LV-12 and LV-13 will reduce visual impact.	Negligible	WY1: Slight adverse SY15: Neutral
VP10	Minor	WY1: Moderate adverse SY15: Moderate adverse	LV10, LV-11 will reduce visual impact. LV14 will avoid upward directed light.	Negligible	WY1: Slight adverse SY15: Slight adverse

Viewpoint Reference	Pre-Mitigation Effect Magnitude	Pre-Mitigation Effect Significance	Mitigation Measures	Post-Mitigation Effect Magnitude	Post-Mitigation Effect Significance
VP11	Moderate	WY1: Large adverse SY15: Large adverse	LV-8, LV-10, LV-11, LV-12, LV-13 will reduce visual impact. LV-14 will avoid upward directed light.	Minor	WY1: Moderate adverse SY15: Moderate adverse
Sequential Views A83	Moderate	WY1: Large adverse SY15: Large adverse	LV-8-LV-14 will avoid and reduce visual impact.	Minor	WY1: Large adverse SY15: Large adverse
Legislation, Policy and Plans	No change to negligible	Neutral	LV8-14 mitigation helps align with legislation, policy and plans	No change to negligible	Neutral

Compliance with Planning Policy

10.7.3. Effects on legislation, plans, policies and guidance related to visual effect (as set out in full Appendix 9.1) have been considered. NPF4 concerns the objectives and integrity of the National Park as well as any significant effects on the SLQs. The overall objectives and integrity of the LLTNP is not likely to be compromised at construction or operation and there will be no residual significant adverse effect upon them. The SLQs of the LLTNP have been assessed in Chapter 9: Landscape Effects.

10.7.4. The NPF4 Policy 6 states that existing trees and woodland should be protected, expanded and/or improved and that there should be no ancient woodland loss or loss of individual trees of high value. The woodland loss has been minimised, with no loss of ancient woodland as a result of the LTS.

10.7.5. The UK Forestry Strategy 4th and 5th editions are concerned with proposed forestry creation or forest clearance. Neither apply as a result of the LTS. There is some felling to facilitate the LTS. As required, the visual impact resulting from this has been assessed.

10.7.6. Woodland Removal Policy, 2009 advocates for no woodland removal and limited reduction. The LTS complies with this as there is the removal of minimal trees only.

10.7.7. The LTS is not fully compliant with the LLTNP Local Development Plan 2017-2021 Policy 2. It complies with Policy 2 in terms of protecting important views and the landscape character of the wider study area but there is residual effect on the static and sequential views. Natural Environment Policy 1 concerns the SLQs as well as woodland and trees and their management. The SLQs have been assessed for any likely significant effect upon them as a result of the LTS (Chapter 9: Landscape Effects). The trees and woodland are protected by the recommended British Standard BS 5837:2012 Trees in relation to design demolition or construction. An Outline Landscape and Environmental Management Plan has been produced.

10.7.8. The conclusion of the visual impact assessment as a result of the construction and operation of the Proposed Scheme is complaint with the relevant policies identified in Volume 4, Appendix 9.1 Landscape Legislation, Policy and Guidance with the exception of Policy 2 in the LLTNP Local Development Plan 2017-2021 due to residual effect on static and sequential views.

10.7.9. Mitigation, and monitoring if applicable, is set out in Chapter 21: Schedule of Environmental Commitments.