

The Cambourne to Cambridge Order

Environmental Statement (Addendum 3 and Clarifications)



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1 Introduction and summary

1.1 Purpose of the Environmental Statement Addendum 3

- 1.1.1. This Environmental Statement (ES) Addendum 3 (ESA3) has been prepared by the Applicant (Cambridgeshire County Council) in order to provide additional environmental information in support of the Transport and Works Act Order (TWAO) Application for the Cambourne to Cambridge (CtoC) project (the Scheme).
- 1.1.2. ESA3 includes:
- **Section 2.1:** Information on downstream mitigation for the expected increase in velocity in the Bin Brook channel immediately downstream of the busway crossing;
 - **Section 2.2:** An assessment of the landscape and visual impact of the proposed bridge at Bin Brook;
 - **Section 3.1:** Details of proposed mitigation for construction and operational noise;
 - **Section 3.2:** Details of further mitigation for operational noise, construction noise and vibration levels during construction;
 - **Section 4:** An identification, description and assessment of 'in-combination effects' of the Scheme on Clare Hall as an academic institution, heritage asset and socio-economic

receptor, including the effects arising from the access to Clare Hall via Rifle Range Road.

- **Section 5:** Clarification on the extent to which the Applicant's proposal to modify Article 5 of the draft Order would give rise to environmental effects; and
- **Appendix 1:** A Residential Visual Amenity Assessment which provides additional evidence to support the Landscape and Visual Impact Assessment in Technical Report 8 [CD1-11.08.04], providing an appraisal of the extent to which the Scheme may give rise to material changes in the outlook and visual experience available from the Salje Building, Clare Hall.
- **Appendix 2:** An assessment of the effects of the Scheme on the Conduit Head Road Conservation Area which has been provided in response to a question from the Inspectors during oral examination at the inquiry.

- 1.1.3. In summary, the assessment presented in this ESA3, concludes that there is no change to the likely significant effects reported in the ES Main Report [CD1-10.01] as supplemented by the ES Addendum 1 (ESA1) [CD1-10.06] and the ES Addendum 2 and Clarifications (ESA2) [CD1-10.07] and that the ES is sound.



1.2 Legal context

- 1.2.1. In accordance with section 13B of the Transport and Works Act (TWA) 1992 (as amended)¹, before determining an application for a TWAO for a development requiring an Environmental Impact Assessment (EIA), the Secretary of State must consider the EIA information and must reach a reasoned conclusion about the likely significant effects of the proposed works or project on the environment. The reasoned conclusion must be taken into account in determining the application and when doing so, the Secretary of State must be satisfied that the reasoned conclusion is up to date.
- 1.2.2. For these purposes, Rule 17 of the Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006² **[CD5-18]** allows the Secretary of State to direct an applicant to supply additional information where the Secretary of State is of the opinion that this is required in respect of an ES. These provisions are intended to ensure that decision-makers and the public have access to a complete and up-to-date understanding of the likely significant environmental effects of a proposed development to enable those effects to be considered and taken into account in decision making.
- 1.2.3. In this particular case, no direction has been made by the Secretary of State under Rule 17² **[CD5-18]** and the Applicant is submitting this ESA3 voluntarily.

¹ Transport and Works Act 1992. Available online at:
<https://www.legislation.gov.uk/ukpga/1992/42/contents>.

1.3 Additional environmental information and clarifications

- 1.3.1. This ESA3 should be read alongside the ES Main Report **[CD1-10.01]** and its supporting documents and technical reports along with the Environmental Statement Addendum 1 and Environmental Statement Addendum 2 and Clarifications as listed below:
- Environmental Statement (Document reference: CtoC-10-ES0) **[CD1-10.01]**;
 - Environmental Statement Addendum 1 (ESA1) (Document reference: CtoC-10-ES5) **[CD1-10.06]**;
 - Environmental Statement (Addendum 2 and Clarifications) (ESA2) **[CD1-11.07]**;
 - Technical Report 1 – Acoustics (Document reference: CtoC-11-TR01) **[CD1-11.01]**;
 - Technical Report 2 – Air Quality (Document reference: CtoC-11-TR02) **[CD1-11.02]**;
 - Technical Report 3 – Climate Resilience (Document reference: CtoC-11-TR03) **[CD1-11.03]**;
 - Technical Report 4 – Community and Human Health, Land Use and Land Take (Document reference: CtoC-11-TR04) **[CD1-11.04]**;
 - Technical Report 5 – Ecological Impact Assessment (Document reference: CtoC-11-TR05) **[CD1-11.05]**;

² The Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006. Available online at:
<https://www.legislation.gov.uk/uksi/2006/1466/contents>.



- Technical Report 6 – Greenhouse Gases (Document reference: CtoC-11-TR06) **[CD1-11.06]**;
- Technical Report 7 – Heritage Impact Assessment (incorporating historic environment desk-based assessment) (Document reference: CtoC-11-TR07) **[CD1-11.07.1]**;
- Technical Report 8 – Landscape and Visual (Document reference: CtoC-11-TR08) **[CD1-11.08.1]**;
- Technical Report 9 – Major Accidents and Disasters (Document reference: CtoC-11-TR09) **[CD1-11.09]**;
- Technical Report 10 – Materials Assets and Waste (Document reference: CtoC-11-TR10) **[CD1-11.10]**;
- Technical Report 11 – Soil, Geology and Land Contamination (Document reference: CtoC-11-TR11) **[CD1-11.11.01]**;
- Technical Report 12 – Traffic and Transport (Document reference: CtoC-11-TR12) **[CD1-11.12]**;
- Technical Report 13 – Water (Document reference: CtoC-11-TR13) **[CD1-11.13.01]**; and
- Technical Report 14 – Arboriculture (Document reference: CtoC-11-TR14) **[CD1-11.14.01]**.



2 Bin Brook – Flood Risk / Landscape and Visual Impact Assessment

2.1 Downstream mitigation for the modelled increase in velocity

- 2.1.1. Table 4-2 of Mr Southon's Proof of Evidence **[CD26-01-APP-W9-1]** sets out the impact of the Scheme on modelled in-channel cross-sectionally averaged maximum velocity from the Applicant's flood risk model (as reviewed by the Environment Agency **[CD 25-17]**). As can be seen from this table, replicated in **Table 2-1** below, the Applicant predicts a 0.02 metres per second (m/s) increase in velocity at the location of the bridge with the Scheme (where velocities are predicted in the region of 0.5 m/s reducing to a 0.002m/s increase at the Herschel Road crossing in the grounds of Clare Hall (where velocities are predicted in the region of 0.6m/s)).
- 2.1.2. It is considered that changes in in-channel cross-sectionally averaged maximum velocity of the scale predicted by the Applicant's flood risk model do not materially increase flood or erosion risk and therefore there are no likely significant effects. Consequently, no mitigation is required, and

consequently no mitigation measures are proposed or assessed.

- 2.1.3. Even if in-channel cross sectionally averaged velocities and peak velocities were to increase in the region of 0.27m/s, they would not materially increase flood or erosion risk for a natural channel of the type observed on site (generally straight, partially vegetated and formed of materials that were cohesive clay-loam in appearance). Such an increase would still not result in any likely significant effects. The exposure to any increased velocity of such a scale is limited to the 1% Annual Exceedance Probability (AEP) event including an allowance for climate change, at which point extension flooding is predicated to the Clare Hall estate and turbulent flows are expected. The velocity at the bed and bank edges is generally expected to be lower than at the centre of the channel due to the friction from the bank and bed materials resulting in a variable velocity profile. Therefore, the erosive forces at the bed and bank are expected to be less than the cross sectionally averaged values quoted. A flow of the magnitude of the 1% AEP event including an allowance for climate change is expected to be a rare occurrence and the period of peak velocity is transient and only associated with the very peak of the flood event.
- 2.1.4. Higher flow velocities may result in an overall increase to the rate in which sediment is transported downstream. However, higher rates of sediment transport do not in themselves cause scour unless there is an imbalance between the rate at which sediment is transported downstream from the reach and the rate at which sediment arrives from upstream. Mr Southon's evidence **[Table 4-2 CD26-01-App-W9-1]** (see below) shows generally consistent modelled in-channel cross-sectionally



averaged maximum velocities along the wider reach of between 0.48-0.73m/s around and upstream of the bridge in the baseline situation. These values are not significantly different ($\pm 0.02\text{m/s}$) as a result of the Scheme. Therefore, there is no evidence of a risk that the Scheme will result in a change to the local sediment regime as a result of the predicted change in modelled in-channel cross-sectionally averaged maximum velocities.

2.1.5. In addition, the channels in the area of interest are generally straight and lack significant constrictions or features such as bridge piers that would encourage local scour.

2.1.6. Scour mitigation measures generally take the form of:

- Scour reduction measures which aim to improve flow conditions at and around a structure to reduce the magnitude and effects of scour. The proposed clear span bridge (no in channel piers) with revetments set back from the channel included in the existing Scheme design negates the need for scour reduction mitigation measures.
- Structural measures to protect the structure foundations. These will be determined at detailed design stage, however due to the setback nature of the bridge revetments it is not considered that scour potential will be a significant design criteria in the bridge foundation design, and it is noted that the bridge foundation will not be exposed to water flow following completion of the works.
- Scour protection measures to limit the extent to which scour can occur by providing a more robust erosion resistant surface include rock armouring, reno mattresses

or channel lining. Such measures may be appropriate where the scour risk is significantly higher than the subject site (reno mattresses for example have been found to be stable in velocities of up to 5m/s). Given the rare occurrence of the event associated with the increased velocity and small predicted change in velocity as a result of the Scheme's permanent works it is not considered necessary or appropriate to prescribe scour protection measures at this site.

2.1.7. However, if in the alternative, the Scheme was to result in an increased risk of scour then mitigation in the form of channel armouring between the proposed Bin Brook crossing and Herschel Road crossing using a layer of 10-20mm sized aggregate to line the channel bed could be conditioned as part of the detailed design and captured as part of the Flood Risk Activity Permit (FRAP). The surface layer of coarser aggregate armouring will protect the finer materials underneath which are not mobilised until the armour layer is removed, reducing the risk of local erosion as the larger aggregate particles require a higher critical velocity or higher critical shear stress to entrain into motion. This work would require cooperation from the riparian owner of the relevant section of the channel. Gravel bars are already a feature of the Bin Brook locally and the channel armouring works are not expected to have any significant environmental impact.

2.1.8. During construction of the Scheme there is a risk that the works to remove the existing bridge structure may result in instability in the banks until such time that bankside vegetation is re-established. Similarly, there is a risk that any existing local natural armouring may be disturbed should any in-

channel works occur. As such care should be taken to provide temporary protection to the banks around the bridge removal work (such as installing temporary hessian matting to exposed banks and hydroseeding) and avoidance of disruption to the existing channel bed (established via a construction method statement). Any in-channel works would be subject to the Flood Risk Activity Permit regime which requires detailed construction method statements to be approved by the Environment Agency prior to commencement of in-channel works.

- 2.1.9. There are no likely significant impacts predicted in regard to flood risk and erosion resulting from the Scheme. The impact of the construction works is capable of being addressed in a construction environmental management plan and the FRAP is the proper instrument to secure the construction method details for engineering works in a sensitive riverine environment. No mitigation measures are proposed as part of the permanent works beyond the principals of design already included (namely clear span bridge and set back abutments) as the Applicant's modelling and assessment have shown none are necessary.

Impact of additional mitigation on ecology

- 2.1.10. If additional downstream mitigation for the modelled increase in velocity is undertaken, this can be actioned without the use of heavy machinery, therefore installation of the new bed material is unlikely to require vegetation clearance or other impacts to habitat within the brook or to its banks. These works can be completed using precautionary working measures to ensure no impacts to the stream banks and to ensure that

pollution controls such as pre-washing of new bedding materials are undertaken prior to installation. Himalayan Balsam is also present in Bin Brook, therefore measures can be implemented to prevent the spread of this invasive plant thereby providing local benefit and ensuring legal obligations are met. Potential temporary impacts associated with the installation of the new material can therefore be wholly mitigated through avoidance measures.

- 2.1.11. The installation of the new bed material will result in a change to the channel bed substrate. Currently, this comprises a mixed substrate of clay and sediment, with some localised areas of shingle. The installation of additional shingle/gravel material would result in a diversification of the substrate in the brook and increase to the area of shingle/gravel bed substrate north of the new bridge crossing. This new bed substrate could be beneficial for invertebrates and fish. However, in the absence of further design detail it is considered that the permanent change in bed substrate would result in a neutral effect upon ecological features.
- 2.1.12. Bin Brook is designated as a City Wildlife Site. The presence of breeding water voles and pollard willows are the reasons for designation of this site. Given that the banks of the Brook can be avoided during construction and no removal of vegetation is likely to be necessary, the designation features of the City Wildlife Site are unlikely to be impacted. The change in substrate is also unlikely to impact these features. Therefore, no impacts are predicted on the designated site.



Table 2-1 – CD26-01-APP-w9-1 Jack Southon Proof of Evidence: Table 4-2 In channel modelled maximum flow and cross-sectionally averaged velocity for the 1% AEP event including 19% allowance for climate change from different models

Node ID	Chainage from proposed bridge	(a) Applicant baseline model maximum in-channel flow (m³/s)	(b) Applicant as-proposed model maximum in-channel flow (m³/s)	Difference between Applicant baseline and proposed model in channel flow ⁸ (b-a) (m³/s)	(c) Applicant baseline model maximum in-channel cross sectionally averaged velocity (m/s)	(d) Applicant as-proposed model maximum in-channel cross sectionally averaged velocity (m/s)	Difference between Applicant baseline and proposed model in channel cross sectionally averaged velocity ⁹ (d-c) (m/s)
BB01_1189	-648m (South of Gough Way estate)	2.697	2.736	0.039	0.409	0.413	0.004
BB01_0796	-255m (north of Gough Way estate)	2.097	2.12	0.023	0.731	0.753	0.022
BB01_0628	-87m	7.142	5.388	-1.754	0.624	0.633	0.009
BB01_0541	0m (location of proposed crossing)	3.339	9.485	6.146	0.483	0.502	0.019
BB01_0461	+80m (Herschel Road crossing in the ground of Clare Hall)	5.772	5.731	-0.041	0.591	0.593	0.002
BB01_0403	+138m (Sylvester Road crossing)	7.387	7.385	-0.002	0.599	0.601	0.002
BB01_329	+191m (Robbinson College access road crossing)	7.048	7.052	0.004	0.517	0.520	0.003
BB01_0049	+471m (Grange Road crossing)	10.399	10.347	-0.052	1.101	1.097	-0.004

2.2 Landscape and Visual Impact Assessment

2.2.1. Technical Report 8 – Landscape **[CD1-11.08.1]** assesses the landscape and visual effects of the proposed bridge structure and associated works at Bin Brook inherently as part of the route section located between the M11 and West Cambridge. The assessment, in line with the Landscape and Visual Impact Assessment (LVIA) methodology **[CD1-11.08.02]**, considers the effect of the Scheme including the Bin Brook bridge structure on landscape receptors Landscape Character Area (LCA) 3B Bourn Tributaries Lowland Farmlands and Townscape Character Area (TCA) 2 West Cambridge **[CD1-11.08.1, Table TR8-4-3, PDF p.40-41]** along with visual receptors in the vicinity of the Scheme **[CD1-11.08.1, Table TR8-4-5, PDF p.43-60]**. The visual receptors close to the Bin Brook bridge are R32, R33, R34, and R35, shown on the Visual Assessment Plan **[CD1-11.08.03, PDF p.5]**

2.2.2. Although the assessment methodology in relation to landscape and visual receptors is sound, additional detail is provided below to illustrate the bridge's relationship to its landscape and visual setting and how the introduction of the proposed Bin Brook bridge has contributed to the assessment of effect the Scheme as a whole would have on the landscape and visual receptors.

Landscape Impact

2.2.3. The proposed Bin Brook bridge would occupy a small area on the edge of both LCA3B Bourn Tributaries Lowland Farmlands and TCA2 West Cambridge. In the rural context, it would be located in the north-eastern corner of the landscape receptor LCA 3B **[CD1-11.08.3, PDF p.4]**, forming a modest, low-lying

feature with a maximum upper surface height of the Busway above prevailing ground levels of less than 2.5 metres. Its design allows it to merge quickly with existing ground levels on either side, assisted by shallow, planted embankments that provide a smooth transition between the structure and surrounding terrain. Additional proposed planting to the south would further integrate the bridge into the landscape and reduce visibility within the wider setting.

- 2.2.4. In the townscape context, the bridge would be situated to the south of university buildings along Herschel Road, separated by existing rear garden vegetation. The structure would have no direct effect on townscape features or character and would be visible only from a limited number of nearby properties, where it may be glimpsed through intervening vegetation.
- 2.2.5. As the bridge represents only a small component of the overall Scheme, its influence on both landscape and townscape is limited. Its modest scale, considered design, and embedded mitigation planting mean that only minor changes to existing landscape elements and character are anticipated.
- 2.2.6. The findings and methodology of the assessment in Technical Report 8 – Landscape **[CD1-11.08.1]** remain valid, and no alterations to the assessment criteria or overall conclusions are required. The sensitivity of TCA 2: West Cambridge is high, and the magnitude of impact of the whole of the Scheme on a winter's day at year 1 of opening is minor-moderate. Therefore, there is likely to be a semi-permanent, medium-term slight-moderate adverse (not significant) effect on TCA 2: West Cambridge at Year 1.



- 2.2.7. The proposed planting will establish over time providing further screening to visual receptors within the TCA and help integrate the Scheme into the townscape. The magnitude of impact on a summer's day at year 15 will reduce to minor. Therefore, there is likely to be a permanent, long-term slight adverse (not significant) effect on TCA 2: West Cambridge at Year 15.
- 2.2.8. Similarly, the findings of the assessment of effect on LCA 3B remain valid. The sensitivity of LCA 3B Bourn Tributaries Lowland Farmlands is medium, and the magnitude of impact on a winter's day at year 1 of operation is minor-moderate. Therefore, there is likely to be a semi-permanent, medium-term slight-moderate adverse (not significant) effect on LCA 3B Bourn Tributaries Lowland Farmlands at Year 1.
- 2.2.9. The proposed planting will establish over time providing further screening to visual receptors within the LCA and help integrate the Scheme into the landscape. The magnitude of impact on a summer's day at year 15 will reduce to minor. Therefore, there is likely to be a permanent, long-term slight adverse (not significant) effect on LCA 3B Bourn Tributaries Lowland Farmlands at Year 15.

Visual Impact

- 2.2.10. Visually, the Bin Brook bridge would form a relatively small-scale element within the wider landscape. Its limited height would ensure that it remains visually subordinate to the surrounding landform and embedded mitigation planting, along with existing vegetation, would restrict medium and long-distance views of the structure. When viewed in the context of the wider landscape, the bridge would appear as a minor component if visible at all, perceived primarily in glimpsed

views through existing vegetation from the properties on Herschel Road (Receptor 35), from properties on Cranmer Road (Receptor 34), and from Dane Drive (Receptor 33). Users of the Track would have potential views of the bridge screened by existing vegetation as the guided busway curves north. As such, the structure would not materially alter the overall composition or character of the views, and its visual influence would be limited. The findings and methodology of the visual assessment in Technical Report 8 – Landscape [CD1-11.08.1] remain valid, and no alterations to the assessment criteria or overall conclusions are required. None of the visual receptors are assessed to have significant effects either on a winter's day at year 1 nor a summer's day at year 15.

Residential Visual Amenity Assessment

- 2.2.11. A Residential Visual Amenity Assessment (RVAA) (**Appendix 1**) has been prepared as additional information, specifically to support the Landscape and Visual Impact Assessment in Technical Report 8 [CD1-11.08.04]. Its purpose is to provide a clear and proportionate appraisal of the extent to which the Scheme may give rise to material changes in the outlook and visual experience available from the Salje Building, Clare Hall.
- 2.2.12. The Landscape and Visual Methodology [CD1-11.08.2] outlines the assessment methodology for the LVIA in accordance with current best practice guidance and policy. The methodology is robust and appropriate for the scale and nature of the proposed Scheme. No objections or concerns were raised by consultees regarding the scope or structure of the assessment in the scoping opinion.

- 2.2.13. While there are no deficiencies in the assessment within Technical Report 8 **[CD1-11.08.1]**, the RVAA in **Appendix 1** has been provided as an additional assessment over and above the fully compliant assessment which has already been undertaken.
- 2.2.14. The RVAA follows recognised guidance (Guideline for Landscape and Visual Impact Assessment (GLVIA3)³ **[CD18-22C, Chapter 6, PDF p.113-134]** and RVAA Technical Note 2/19⁴ and considers whether the Scheme could result in visual impacts of such magnitude as to breach the Residential Visual Amenity Threshold (i.e. causing unsatisfactory living conditions).
- 2.2.15. The Salje Building is identified as a high sensitivity receptor due to the fact that occupants experience views from their accommodation and associated private gardens on a daily basis, often for extended periods, and place particular value on the quality of their immediate outlook. Overall, the RVAA concludes that no significant visual effects will occur during both construction and operation of the Scheme and that as a result this will not breach the Residential Visual Amenity Threshold nor render the property an unattractive place to live.

³ IEMA (2013). Guideline for Landscape and Visual Impact Assessment. Available online at: <https://www.landscapeinstitute.org/technical/glvia3-panel/>.

⁴ Landscape Institute (2019). *Residential Visual Amenity Assessment Technical Note 2/19*. Available at: [tgn-02-2019-rvaa.pdf](https://www.landscapeinstitute.org/technical/tgn-02-2019-rvaa.pdf).



3 Noise and Vibration

3.1 Proposed mitigation for construction and operational noise

3.1.1. The draft Code of Construction Practice (CoCP) **[CD1.26, pdf pages 49-51]** sets the framework for construction noise mitigation. This confirms **[CD1.26, paragraph 10.1.1, pdf page 49]** that best practicable means (BPM) will be used to minimise noise and vibration at noise sensitive receptors, including Clare Hall.

3.1.2. BPM is defined in the Environmental Protection Act 1990⁵ **[CD5-07]** as those measures which are ‘reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to financial implications’. As such, it comprises a holistic evaluation of the merits of mitigation options, which would include the potential visual impacts of acoustic screening on listed buildings.

3.1.3. As stated in the ES **[CD1-11.01, paragraph 4.2, pdf page 13]**, the CoCP **[CD1.26, paragraph 10.1.3, pdf page 49]** and BS 5228 **[CD15.01, clause 4, pdf page 9]** part of the BPM comprises engagement with noise sensitive receptors to:

- identify if there are times when noisy activities would be more, or less, impactful so that the construction programme can be tailored to minimise impacts; and
- warn potentially affected receptors in advance when periods of particularly noisy work have been programmed.

3.1.4. This community engagement stage is essential as it may identify that shorter periods of more intense (noisier) work could be less impactful than works that are more protracted but quieter, or vice versa.

3.1.5. The ES **[CD1-11.01, paragraph 4.2, pdf page 13]** and CoCP **[CD1.26, paragraph 10.1.3, pdf page 49]** also explain that the control of high noise levels during the construction phase, from noisy plant and activities, when they do arise, will also be achieved via the:

- Review of construction programme and methodology to consider the quietest methods available;
- Selection of quiet and low vibration equipment;
- Use of less intrusive alarms, such as broadband vehicle reversing warnings;
- Location of equipment on site to maximise screening and separation with respect to receptors;
- Provision of acoustic enclosures;
- Use of local screening of equipment; and
- The control of working hours.

⁵ Environmental Protection Act 1990. Available online at: <https://www.legislation.gov.uk/ukpga/1990/43/contents>.



- 3.1.6. With regards to operational noise impacts, the ES **[CD1-11.01, paragraph 6.17, pdf page 29]** concluded that significant effects are possible at Clare Hall due to the number of bus movements during the night-time period. However, with the inclusion of mitigation measures for example reducing the number of bus movements, using electric buses, or restricting movements during the 06:00-07:00 and 23:00-00:00 periods (with no bus movements between 00:00 and 06:00), no significant effects are anticipated. This mitigation would be secured through the imposition of proposed condition 34 to be attached to the deemed planning permission.

3.2 Further mitigation for construction noise, vibrations levels during construction and operational noise

Construction Noise and Vibration at Clare Hall

- 3.2.1. It is not possible, at this stage, to identify where full, or partial, plant enclosures would be necessary or the specific locations of any local noise screening that may be required. The need for these would be determined once detailed construction plans have been developed following consultation with noise sensitive neighbours.
- 3.2.2. The finalised construction noise mitigation measures will be presented in the Demolition and Construction Noise and Vibration Assessment, Management and Monitoring Plan in the Local Environmental Management Plan (LEMP) which will

be submitted to, and approved by, the Local Planning Authority in accordance with the draft pre-commencement condition **[CD1-14, Draft condition 9, pdf page 10]**⁶. The application to discharge the LEMP will include detailed plans for, and details of, the construction works, predictions of the anticipated levels of noise and vibration at Clare Hall, and appropriate and proportionate mitigation measures.

- 3.2.3. A Section 61 application, requiring calculations of noise and vibration based on detailed information from the Principal Contractor could be secured via a planning condition. The approved Section 61 prior consent will provide an additional layer of scrutiny and regulatory mechanism to ensure that all parties are content with the mitigation proposed and the outcomes achieved.
- 3.2.4. As set out in paragraph 3.13.1, BPM will be used to minimise noise and vibration with the likely approach to mitigation set out in the ES **[CD1-11.01, paragraph 4.2.1, pdf page 13]**, as secured in the CoCP **[CD1.26, paragraph 10.1.3, pdf page 49]** and summarised 3.1.5 above. Furthermore, and for the avoidance of doubt, if the combination of physical mitigation and construction operational controls implemented in accordance with the LEMP are unable to sufficiently reduce levels of noise or vibration at receptors, the construction programme can always be amended so that impacts remain below the duration threshold to avoid significant effects. Consequently, the residual effects from construction noise and

⁶ BSI (2009). Code of practice for noise and vibration control on construction and open sites. Available online at:

<https://knowledge.bsigroup.com/products/code-of-practice-for-noise-and-vibration-control-on-construction-and-open-sites-noise>.



vibration will be **temporary minor adverse (non-significant) effects** at Clare Hall.

- 3.2.5. The final determination of significance is subject to context, whereby construction noise and/or vibration is only considered a significant effect if the numerical threshold (65 dB $L_{Aeq,12h}$ and 1 mm/s⁻¹ Peak Particle Velocity (PPV)) is exceeded *and* one of the duration criteria (10 or more days/nights in any 15 consecutive days, or a total number of days exceeding 40 in any 6 consecutive months) are exceeded as cited in BS 5228⁶.
- 3.2.6. As there is no contractor appointed at this stage, the exact details of any plant and the construction programme is not yet known so detailed noise/vibration predictions are not possible. However, it is possible to ensure that significant effects will be avoided via monitoring of noise/vibration levels during the construction phase, adoption of the mitigation measures set out in paragraph 3.1.5 and in paragraph 3.1.6 and, if necessary, adjusting the programme/activities to avoid any exceedances of the duration thresholds.
- 3.2.7. 3.1.53.1.6 If additional mitigation measures in the form of temporary acoustic screening are required during the construction works, these would not result in greater harm through visual alteration of the setting of Clare Hall Grade II* listed building than would occur as a result of the construction works in the absence of those measures. This is because the appearance of acoustic enclosures and/or local screening would not result in a greater alteration of the setting and significant views than would result from visibility of the equipment that they contain. An enclosure/screen would present a single, static object in views rather than the cluttered

appearance of one or several plant/machines that are likely to be more conspicuous as a result of also being in motion.

- 3.2.8. A 'best case' sensitive design for an acoustic screen along Rifle Range Track would be only sufficient to shield all floors of the adjacent blocks, partly visibly permeable, with breaks for access at the three entrances to Clare Hall (which would reduce its effectiveness as noise attenuation), and would extend only as far east as the south-eastern corner of the listed building. Such a barrier would still be a noticeable and unsympathetic new element of Clare Hall Grade II* listed building's setting and West Cambridge Conservation Area; both assets would experience **minor adverse (non-significant) effects**, which would be in the lower end of the range of less than substantial harm. The significance of Elmside and 48 Grange Road Grade II listed buildings would not be harmed by such a 'best case' design.

Operational Noise

- 3.2.9. With regards to operational noise, the residual effects are as reported in ESA2 [CD1-10.07] whereby, subject to the inclusion of mitigation measures specified therein (e.g. reducing the number of bus movements, using electric buses, or restricting movements during the 06:00-07:00 and 23:00-00:00 periods (no bus movements will occur between 00:00 and 06:00)), the residual effects would be **negligible effects (non-significant)** from the operation of the busway. This mitigation would be secured through the imposition of proposed condition 34 to be attached to the deemed planning permission.



- 3.2.10. Additional operational mitigation measures such as the inclusion of acoustic glazing and ventilation and an acoustic screen, would also result in **negligible (non-significant)** effects.
- 3.2.11. A permanent acoustic screen between the emergency and maintenance access track and the Brian Pippard and Clare Hall buildings is **not** proposed as operational mitigation. Whilst this would likely remove the potential for significant adverse noise effects on Clare Hall Grade II* listed building, it would create a visual and physical barrier that would impede views and remove the permeable relationship between the interior spaces of Clare Hall and the land around, as well as presenting a new intrusive structure within West Cambridge Conservation Area. This would constitute a **moderate adverse (significant)** effect on both Clare Hall Grade II* listed building and the conservation area. In addition, Elmside Grade II listed building and 48 Grange Road Grade II listed building would experience **minor adverse (non-significant) effects** due to introduction of this substantial structure to their settings; although this would be towards the bottom of the range of less than substantial harm for Elmside and at the bottom for 48 Grange Road.
- 3.2.12. It would also be likely to result in significant adverse landscape and visual effects. It would create a very substantial new visual element that would be wholly out of scale and character with the local environment. The introduction of a continuous or near continuous solid barrier would be an overbearing and visually intrusive feature and would fundamentally alter the established visual connection between the properties and the wider landscape context. Even with high-quality materials or partial planting, the residual effect would likely remain large adverse and significant for adjacent properties.
- 3.2.13. Subject to obtaining the landowner's consent and separate listed building consents, acoustic glazing and ventilation could be taken forward as additional mitigation on the south elevation of Clare Hall's buildings. Provided that work was designed and enacted sensitively, the level of harm to the building's character as a Grade II* listed building of special architectural and historic interest would be **minor adverse (non-significant)** equating to the lower end of the scale of less than substantial harm.



4 Effects due to impact interactions at Clare Hall

- 4.1.1. A further assessment of effects due to impact interactions has been undertaken to demonstrate the consideration of the effects on Clare Hall in a holistic manner. While ESA1 [CD1-10.06] and ESA2 [CD1-10.07] presents the assessment of combined effects on Clare Hall, additional detailed has been provided within this section of ESA3. Such effects occur when impacts interact to result in an additional effect. This interaction has the potential to occur when a single receptor is affected by multiple residual effects arising from different environmental topics. The residual effects reported within the main ES [CD1-10.01] and subsequent addendums (ESA1 [CD1-10.06] and ESA2 [CD1-10.07], including ESA3) have been carried forward where relevant into this assessment of effects due to impact interactions. Residual effects are defined as the environmental effects that remain after mitigation measures have been applied to the Scheme. This assessment addresses the interaction between the reported residual effects on Clare Hall, adhering to Rule 7A(2)(e) of the Transport and

Works (Applications and Objections Procedure) (England and Wales) Rules 2006 [CD5-18].

Methodology

- 4.1.2. The following methodology has been applied to re-assess the effect of impact interactions on Clare Hall. The criteria for assigning significance, uses principles in the Guidelines for the Assessment of Indirect and Cumulative Impact and Impact Interactions⁷ and professional judgement.
- 4.1.3. Step 1 involves the identification of receptors that may be affected by multiple environmental topics and, consequently, may experience more than one type of residual effect. These are referred to as common receptors. For Step 1, the identified common receptor is Clare Hall.
- 4.1.4. Step 2 presents the residual effects on common receptors, derived from the ES [CD1-10.01], ESA1 [CD1-10.06], ESA2 [CD1-10.07] and ESA3. The residual effects identified that are greater than negligible significance are taken forward for assessment in Step 3.
- 4.1.5. Step 3 determines the effects that are predicted to occur as a result of impact interactions from separate topic areas combining to produce a further effect. If the resulting residual effects from impact interactions are deemed significant, appropriate mitigation measures would be recommended.

⁷ Hyder (1999). Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions. Available online at: [guideassess.pdf](#).

- 4.1.6. The following factors have been used to determine the significance of effects due to impact interactions:
- Identification of Clare Hall as a receptor influenced by more than one environmental topic; and
 - The extent to which the Scheme alters the condition of Clare Hall, based on information presented within the relevant Technical Reports and any reassessment within ESA1 [CD1-10.06], ESA2 [CD1-10.07] and ESA3.
- 4.1.7. The classifications used to define significance levels are summarised in **Table 4-1** and draw on Table 3.7 significance categories and typical descriptions, provided in DMRB LA 104⁸.

8 DMRB (2020). LA 104 – Environmental assessment and monitoring.
Available online at:

<https://www.standardsforhighways.co.uk/search/0f6e0b6a-d08e-4673-8691-cab564d4a60a>.



Table 4-1 - Significance Criteria for assessing effects due to impact interactions

Significance Category	Definition of Effect
Very large	Adverse or beneficial residual effects that are predicted to occur in relation to separate topic areas which may interact to produce a further effect that is material in the decision-making process.
Large	Adverse or beneficial residual effects that are predicted to occur in relation to separate topic areas which may interact to produce a further effect that is likely to be material in the decision-making process.
Moderate	Adverse or beneficial residual effects that are predicted to occur in relation to separate topic areas which may interact to produce a further effect that is considered to be a material decision-making factor.
Slight	Adverse or beneficial residual effects that are predicted to occur in relation to separate topic areas which may interact to produce a further effect that is not material in the decision-making process.
Neutral	No effects or effects that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

Assessment

Step 1

- 4.1.8. 4.1.3The common receptor identified for the assessment of effects due to impact interactions, for the purposes of ESA3, is Clare Hall.
- 4.1.9. Clare Hall, founded in 1966, is a college specifically for researchers and postgraduate students. Clare Hall is also attended by visiting academics, with approximately 24 visiting professors joining annually and staying at the College from three months to a year. On the 6 September 2018, Clare Hall was designated as a Grade II* Listed Building under the provisions of the Planning Act 1990. Designed by Ralph Erskine, he looked to create a unique, integrated community environment, providing an inclusive space for students, academics, and their families.
- 4.1.10. Clare Hall has a number of future development proposals, which include a new Auditorium and Student Accommodation. The College considers this growth to be important for their future economic and world class reputation. While the Rifle Range Track to the south is currently used by Clare Hall for pedestrian access and maintenance, it is understood that the track may be required for construction purposes to deliver the aforementioned developments.
- 4.1.11. The Scheme lies approximately 7.5m south of the nearest point to a building which forms part of Clare Hall. The Scheme crosses Bin Brook to the west of Clare Hall and runs along the Rifle Range Track where the Scheme forms a junction with Grange Road. While Clare Hall's land ownership is not directly affected by the construction works, construction of the Scheme

and subsequently operation of the Scheme, will occur adjacent to Clare Hall's land holding. Additionally, construction of the Bin Brook bridge will occur in close proximity to Clare Hall's residential accommodation. During operation, 9 buses are expected to run in each direction every hour.

Step 2

- 4.1.12. Step 2 outlines the temporary and permanent residual effects reported in the ES [CD1-10.01], ESA1 [CD1-10.06], ESA2 [CD1-10.07] and ESA3. A summary of the commentary below has been provided within **Table 4-2** and **Table 4-3**, respectively.

Temporary effects

- 4.1.13. Clare Hall has been identified as a sensitive noise receptor due to its proximity to the construction works. It is possible to ensure that significant effects will be avoided via monitoring of noise/vibration levels during the construction phase and, if necessary, adjusting the programme/activities to avoid any exceedances of the duration thresholds. Consequently, it has been concluded that a **temporary minor adverse (non-significant) effect** would be anticipated.
- 4.1.14. Construction related dust and emissions from traffic using the Rifle Range Track, adjacent to Clare Hall, during the construction of the Scheme, would constitute a **negligible**

(non-significant) effect on Clare Hall. Mitigation measures have been identified for the control of dust and channels for registering concern should there be periods when dust is perceived as a nuisance by receptors in the vicinity of the working area.

- 4.1.15. In terms of accessibility, access to Clare Hall via the Rifle Range Track is considered to have Medium sensitivity⁹, in accordance with Table 3.11 of the DMRB guidance LA 112¹⁰. Although temporary closure of the Rifle Range Track will be required during construction, as stated in Mr Lonergan's Rebuttal [CD26-01-APP-W8-4] 'construction access will be allowed in line with any planning consent'. Any diversion to those accessing Clare Hall is unlikely to be greater than an additional 50m, therefore, following the criteria outlined in Table TR4-2-1 in ES Technical Report 4 [CD1-11.04], the magnitude of impact is assessed as Negligible. This results in a **slight adverse (non-significant) effect**.
- 4.1.16. The assessment of temporary socio-economic effects on Clare Hall during the construction of the Scheme has applied the assessment approach outlined within section 9.4 of the ES Scoping Report [CD1-10.05], which draws on the DMRB LA 112¹⁰ guidance. Using Table 9-1 Sensitivity of receptors of the ES Scoping Report [CD1-10.05], Clare Hall is assessed as a Medium sensitivity receptor, as it has limited capacity and

⁹ Design Manual for Roads and Bridges (DMRB) LA 112 defines medium sensitivity WCH: 1) public rights of way and other routes close to communities which are used for recreational purposes (e.g. dog walking), but for which alternative routes can be taken. These routes are likely to link to a wider network of routes to provide options for longer, recreational

journeys, and / or 2) rights of way for Walkers, Cyclists and Horse riders crossing roads at grade with >4000 - 8000 vehicles per day.

¹⁰ DMRB LA 112 Population and Human Health (2020). Available online: <file:///C:/Users/UKWXE003/Downloads/LA%20112%20revision%201%20Population%20and%20human%20health-web.pdf>.



means to absorb change and limited range of alternative resources available to those disturbed during construction. Using Table 9-3 Impact magnitude criteria, in the ES Scoping Report [CD1-10.5], the magnitude of impact is assessed as temporary minor adverse, as the Rifle Range Track will be required temporarily to facilitate the construction of the Scheme, however alternative means of access remain. The attractiveness of the College as an important academic institution for visiting professors and students, could be impacted by noise, air quality and visual effects during to the construction of the Scheme. This will be managed through the implementation of the measures outlined within the CoCP [CD1-26] and will occur over a short-term period. Using LA 104⁸ a **slight adverse (non-significant) effect** has been determined.

- 4.1.17. Regarding heritage, as described in Appendix ES4 - ES Scoping Report and Opinion [CD1-10.05, para. 10.7.2, p. 138], temporary effects on the settings of designated heritage assets during the construction phase were scoped out of the EIA on the basis that there were unlikely to be any significant environmental effects above what is reported for the operation phase due to their short duration. Temporary minor visual and noise impacts during the construction phase would intrude on the setting of Clare Hall, thereby diminishing viewers' ability to understand and appreciate its character as a Grade II* listed building of special architectural and historic interest. This would result in a degree of harm, which would equate to a temporary, **short-term minor adverse (non-significant) effect**. Should additional mitigation measures in the form of temporary acoustic screening, in line with the best-case design

in paragraph 3.2.8, be required during the construction works, the residual effects experienced would remain **minor adverse (non-significant)**.

- 4.1.18. Regarding visual impacts on Clare Hall, Technical Report 8 (TR8) [CD1-11.08.01] assesses the predicted effects on visual amenity during construction on Receptor R35, which includes residential receptors which back onto the Rifle Range Track, including Clare Hall's residential accommodation. TR8 [CD1-11.08.01] identifies the sensitivity of R35 as medium, and the magnitude of impact as minor. Therefore, a temporary, **short-term slight adverse (non-significant) effect** on R35 is expected. ESA3, **Appendix 1**, has assessed visual effects to the Salje building during construction. The assessment concluded that the Scheme would result in a **slight adverse (non-significant) effect** during construction. As a result, this does not change the conclusions of the ES [CD1-10.01], ESA1 [CD1-10.06] and ESA2 [CD1-10.07] and the residual effects remain the same.
- 4.1.19. Following implementation of the Construction Traffic Management Plan (CTMP), Technical Report 12: Traffic and Transport establishes that the Scheme will have a **negligible (non-significant) effect** on severance, driver delay, pedestrian and cyclist delay, pedestrian amenity, fear and intimidation and accidents and safety during construction, for the users of the highway network in the vicinity of Clare Hall. The CTMP will detail methods which will be implemented to manage construction-related vehicle trips.
- 4.1.20. In respect of flood risk, there is a risk that removal of the existing bridge structure during construction may result in instability in the banks until bankside vegetation has re-



established. Temporary protection measures to the banks around the bridge removal site (such as installing temporary hessian matting to exposed banks and hydroseeding) should be outlined within the CoCP [CD1.26]. The location of the bridge removal works is adjacent to Clare Hall's grounds and any deterioration in the stability of channel banks has the potential to impact bank condition immediately downstream.

- 4.1.21. Similarly, there is a risk that any local natural armouring of the channel bed may be disturbed by any in-channel works. The disruption of natural armouring has potential to increase rates of erosion locally resulting in potential deterioration of channel condition until armouring is re-established and a new equilibrium reached. Avoidance of disruption to the existing channel bed can be achieved through avoidance of disruption to the existing channel bed set out within a construction method statement.
- 4.1.22. Any in-channel works would be subject to the Flood Risk Activity Permitting (FRAP) regime which requires detailed construction method statements to be approved by the Environment Agency prior to commencement of in-channel works.
- 4.1.23. As a result of the construction mitigations proposed it is considered that the construction works would have a **negligible (non-significant) effect** on flood risk and erosion so will not increase risk of flooding or erosion at Clare Hall.

Permanent effects

- 4.1.24. Potentially **significant noise effects** were identified at Clare Hall due to the operation of the Scheme during the night-time period. However, these effects could be reduced once the timetabling information is known, by reducing the number of diesel bus movements during the 06:00 – 07:00 and 23:00 – 00:00 periods at Clare Hall (no bus movements will occur between 00:00 and 06:00) and / or through the use of fully electric buses. This is to be secured through planning condition 34. On that basis, a **negligible (non-significant) effect** would be likely to arise from the operation of the busway at Clare Hall. The ES Scoping Report [CD1-10.05] outlines that operational vibration was scoped out, as DMRB LA 111¹¹ advises that maintained road surfaces are to be free from irregularities which avoids the potential for significant adverse vibration effects.
- 4.1.25. The air quality assessment undertaken within Technical Report 2: Air Quality [CD1-11.02] has reported a **Negligible (non-significant) effect** at Clare Hall, with no predicted exceedances of the relevant air quality objectives/limit values for Nitrogen Dioxide, particulate matter with a diameter of 10 micrometres or less (PM₁₀) and particulate matter with a diameter of 2.5 micrometres or less (PM_{2.5}).
- 4.1.26. Regarding accessibility, access to Clare Hall via the Rifle Range Track is considered to have a medium sensitivity⁹, in

¹¹ DMEB LA 111 Noise and Vibration. Available online at: <file:///C:/Users/UKWXE003/Downloads/LA%2011%20revision%20%20Noise%20and%20vibration-web.pdf>.

accordance with Table 3.11 of the DMRB standard LA 112¹⁰. During Scheme operation, access will be maintained via the emergency and maintenance access track, which will operate in compliance with a busway access protocol. As such, this will provide improved access for cyclists, connecting Clare Hall with areas to the west. Walkers travelling west from Clare Hall are likely to experience some loss of amenity due to the reduction in footpath width to the south of the College. Based on the criteria outlined in the ES Scoping Report [CD1-10.05], the magnitude of impact is anticipated to be negligible, resulting in a permanent **neutral (non-significant) effect**.

- 4.1.27. Technical Report 4 [CD1-11.04], in section 2.2, identifies the Scope of assessment, referencing the EIA Scoping Report and EIA Scoping Opinion and sets out that impacts on private property and development land and businesses were scoped out from the ES during operation of the Scheme. Despite this, the socio-economic operational effects on Clare Hall, have been assessed in ESA3 following the ES Scoping Report [CD1-10.05], and DMRB LA 112¹⁰. The sensitivity of Clare Hall within this context has been assessed as medium, as it has limited capacity and means to absorb change and limited range of alternative resources available to those disturbed. The magnitude has been assessed as minor, in line with ES Scoping Report [CD10-10.05] Table 9-3 Impact magnitude criteria, due to the Scheme affecting a small number of receptors during its operation. An overall **minor adverse (non-significant) effect** has been assessed.
- 4.1.28. Regarding Clare Hall's character as a Grade II* listed building of special architectural and historic interest, Technical Report 7 Appendix TR7.1: Heritage Statement [CD1-11.07.2] identified

that there would be harm as a result of changes to setting in the form of minor visual and noise impacts. These amount to a permanent **minor adverse (non-significant) effect**. Should additional operational mitigation measures in the form of acoustic glazing and ventilation be required the residual effects experienced would remain **minor adverse (non-significant)**.

- 4.1.29. In terms of Landscape and Visual impact on Clare Hall, the assessment of predicted effects on visual amenity during operation has been assessed as semi-permanent, medium-term **slight-moderate adverse (non-significant) effect** for R35 (which includes residential receptors which back onto the Rifle Range Track, including Clare Hall's residential accommodation) at Year 1. The magnitude of impact on a summer's day at year 15 is predicted to remain minor-moderate, resulting in a permanent, long-term **slight-moderate adverse (non-significant) effect**. ESA3, **Appendix 1**, has assessed visual effects to the Salje building during operation. The assessment concluded that the Scheme would result in a **slight adverse (non-significant) effect** during operation at year 1 and **negligible (non-significant) effect** during operation at year 15. As a result, this does not change the conclusions of the ES [CD1-10.01], ESA1 [CD1-10.06] and ESA2 [CD1-10.07] and the residual effects remain the same.
- 4.1.30. Technical Report 11: Geology, Soils and Land Contamination [CD1-11.11.01] identifies a permanent **negligible (non-significant) effect** on site users and adjacent site users, including neighbouring residents. As Clare Hall is adjacent to the Scheme, Clare Hall has been included as a receptor under this heading. These effects relate to the impact on the health of current site users and adjacent site users from contaminated



soils, groundwater, particulate matter, asbestos, dust vapours and ground gases. The occurrence of contamination will be addressed during the construction phase, this will include remediation works (where required) and mitigation measures (outlined within Technical Report 11 [CD1-11.11.01]), which providing these are in place, limit potential for exposure of any residual contamination to future sites users.

- 4.1.31. Technical Report 12: Traffic and Transport assessment concludes that the Scheme will have a **negligible (non-significant) effect** on severance, pedestrian delay, pedestrian amenity, fear and intimidation, driver delay and road safety during operation, on the highway network surrounding Clare Hall.
- 4.1.32. It is considered that there is no material increase to flood or erosion risk as a result of the permanent works including to the Clare Hall site. The proposed bridge design conforms to scour reduction practices (viz. Clear span and set back abutments) and appropriate below ground structural measure detailing can be specified at detailed design stage to protect the bridge foundations.
- 4.1.33. Only a minor increase is predicted to modelled in-channel cross-sectionally averaged velocity (of the scale of 0.02m/s) in the 1% AEP event including an allowance for climate change. There is no evidence to suggest the proposed works would result in a sediment imbalance or scour risk, as such local scour protection is not considered necessary to respond to the very small change in peak velocity predicted in a rare, transient event. Accordingly, it is considered that the permanent works would have a **negligible (non-significant) effect** on flood risk and erosion to Clare Hall or the wider area.

Summary

- 4.1.34. **Table 4-2** and **Table 4-3** below provide a summary of the residual effects outlined within Step 2, paragraphs 4.1.13 to 4.1.33. No temporary residual effects on Clare Hall were reported for Climate Change, Ecology, Greenhouse Gases, Major Accidents and Disasters, Material Assets and Waste and Soil, Geology and Land Contamination. No permanent residual effects on Clare Hall were reported for Climate Change, Ecology and Greenhouse Gases. Accordingly, these topics are not included within summary tables **Table 4-2** and **Table 4-3** or assessment tables **Table 4-4** and **Table 4-5**.



Table 4-2 - Temporary Residual Effects on Clare Hall

Common Receptor	Noise and Vibration	Air quality	Community and Human Health	Heritage	Landscape and visual	Traffic and Transport	Flood Risk
Clare Hall	Minor adverse (non-significant)	Negligible (non-significant)	Slight adverse (non-significant) effect on access to Clare Hall via the Rifle Range Track. Slight adverse (non-significant) socio-economic effect.	Short-term minor adverse (non-significant)	Slight adverse (non-significant)	Negligible (non-significant)	Negligible (non-significant)

Table 4-3 - Permanent Residual Effects on Clare Hall

Common Receptors	Noise	Air quality	Community and Human Health	Heritage	Landscape and visual	Soil, Geology and Land contaminate	Traffic and Transport	Flood risk
Clare Hall	Potentially Significant noise effects during the night-time period. However, these effects could be reduced to Negligible (non-significant) once timetabling information is known, by reducing the number of diesel bus movements during the 06:00 – 07:00 and 23:00 – 00:00 periods at Clare Hall and / or through the use of fully electric buses. This is to be secured through planning condition 34.	Negligible (non-significant)	Neutral (non-significant) effect on access to Clare Hall via the Rifle Range Track. Minor adverse (non-significant) socio-economic effect.	Minor adverse (non-significant)	Slight-moderate adverse (non-significant) effect on R35 at Year 1 and Year 15. Slight adverse (non-significant) effect on the Salje building at Year 1 and Negligible (non-significant) effect at Year 15.	Negligible (non-significant)	Negligible (non-significant)	Negligible (non-significant)

Step 3

- 4.1.35. Step 3 determines the effects that may have occurred as a result of impact interactions between the existing non negligible / neutral residual effects reported in **Table 4-2** and **Table 4-3**. As such, for the assessment of temporary effects on Clare Hall, Noise and Vibration, Community and Human Health, Socio-economics, Heritage and Landscape and Visual have been brought forward to Step 3.
- 4.1.36. Noise, Socio-economics, Heritage and Landscape and Visual have been brought forward to Step 3 for the assessment of permanent effects due to impact interactions on Clare Hall.
- 4.1.37. If the resulting effects from impact interactions are deemed significant, appropriate mitigation measures would be recommended. The results of the assessment of temporary and permanent effects due to impact interactions are outlined within **Table 4-4** and **Table 4-5**, respectively.



Table 4-4 - Temporary effects due to impact interactions

Common receptor	Residual Effects (above negligible / neutral)	Effects due to impact interactions	Mitigation
Clare Hall	Noise and Vibration Minor adverse (non-significant) effect Community and Human Health Slight adverse (non-significant) effect Socio-economics Slight adverse (non-significant) effect Heritage Minor adverse (non-significant) effect Landscape and visual Slight adverse (non-significant) effect	Non-significant adverse temporary residual effects are predicted to users of Clare Hall with regard to the topics of Noise and Vibration, Community and Human Health (access), Socio-economics, Heritage and Landscape and Visual. Although the reported residual Noise and Vibration, Community and Human Health and Landscape and Visual impacts are each assessed as minor / slight / low adverse (non-significant), their interaction could potentially cause an increase in effects experienced by users of Clare Hall. This could primarily be as a result of construction noise, a change in visual setting and a change in access arrangements. Although Clare Hall college users could experience a combination of these effects, given the temporary, transient and localised nature of the effects with works being confined to a discrete area to the south of the College boundary and the predicted non-significant effects varying as works move along Rifle Range Track, with regards to Table 4-1 above, these impact interactions could result in an effect that is slight adverse (non-significant) i.e. adverse effects that are predicted to occur in relation to separate topic areas interacting to produce a further effect that is not material in the decision-making process. This assessment also takes into account the location where there would be the greatest focus of construction work in this area (Bin Brook crossing) and Clare Hall (for example in proximity to the Salje Building and associated buildings to the west within Clare Hall). At this point the works would be moving slightly further away from properties associated with Clare Hall and are therefore expected to experience a similar level of impact interactions to those locations at Clare Hall which are closer but would be exposed	No additional mitigation required.

Common receptor	Residual Effects (above negligible / neutral)	Effects due to impact interactions	Mitigation
		to less intensive construction works (e.g. Brian Pippard building to the east within Clare Hall). It is anticipated that any effects that arise from the interactions of the reported residual effects, will be appropriately managed during the construction of the Scheme through the measures set out in the CoCP [CD1-26]. The effects on Clare Hall as a heritage asset relate to potential alteration of its setting to the south by both acoustic and visual impacts during the construction works. This may temporarily affect the attributes of the setting that contribute to its character as a building of more than special architectural and historic interest, for which Clare Hall was designated as a listed building at Grade II*. With regards to Table 4-1 above, it is considered that these impact interactions could give rise to an effect on Clare Hall as a heritage asset that is slight adverse (non-significant) i.e. adverse effects that are predicted to occur in relation to separate topic areas interacting to produce a further effect that is not material in the decision-making process. Additionally, temporary socio-economic effects could occur as a result of the above interactions of impacts (e.g. noise, visual), as visitors and students could potentially be less likely to engage with the resources provided at the College. Due to the temporary nature of these effects, the fact that the main access is from the unaffected Herschel Road and measures set out in the CoCP such as timings of construction works and noise limits [CD1-26], it is considered that these impact interactions could give rise to a combined socio economic effect on Clare Hall that is slight adverse (non-significant) i.e. adverse effects that are predicted to occur in relation to separate topic	



Common receptor	Residual Effects (above negligible / neutral)	Effects due to impact interactions	Mitigation
		areas interacting to produce a further effect that is not material in the decision-making process.	



Table 4-5 – Permanent effects due to impact interactions

Common receptor	Residual Effects (above negligible / neutral)	Effects due to impact interactions	Mitigation
Clare Hall	Noise Significant adverse noise effects are anticipated, however, significant effects at Clare Hall could become negligible, non-significant once the timetabling information is known, by reducing the number of bus movements and / or fully electric buses are in use. This is to be secured through planning condition 34. Socio-economics Minor adverse (non-significant) effect Heritage Minor adverse (non-significant) effect Landscape and Visual Semi-permanent, medium-term slight-moderate adverse (non-significant) effect on R35 (which includes residential receptors which back onto the	Significant adverse permanent residual effects on users of Clare Hall are predicted in relation to the topic of Noise prior to the application of the suggested mitigation, secured through planning condition 34. Non-significant permanent adverse residual effects are predicted in relation to the topics of Socio-economics, Heritage and Landscape and Visual. The interaction of the Noise effect and Landscape and Visual effect may collectively increase effects experienced by visitors and students of the College, as the introduction of moving buses has the potential to cause a visual and acoustic distraction. This interaction would be experienced in intervals, at the point at which buses pass by, mainly confined to those users of Clare Hall located within the southern part of Clare Hall's curtilage. Therefore, with regards to Table 4-1 above, these impact interactions could result in an effect that is slight adverse (non-significant). i.e. adverse effects that are predicted to occur in relation to separate topic areas interacting to produce a further effect that is not material in the decision-making process. This could reduce further once timetabling information is known, by reducing the number of bus movements and / or fully electric buses are implemented (secure through planning condition 34), reducing the acoustic element to negligible and subsequently removing the effect interaction. The permanent effects on Clare Hall as a heritage asset relate to potential alteration of its setting to the south by both acoustic and visual impacts. This may temporarily affect the attributes of the setting that contribute to its character as a building of more than special architectural and historic interest, for which Clare Hall was designated as a listed building at Grade II*. With regards to	No additional mitigation required.

Common receptor	Residual Effects (above negligible / neutral)	Effects due to impact interactions	Mitigation
	Rifle Range Track, including Clare Hall's residential accommodation) at Year 1 and Year 15. Slight adverse (non-significant) effect on Salje building at Year 1.	Table 4-1 above, it is considered that these impact interactions could give rise to an effect on Clare Hall as a heritage asset that is slight adverse (non-significant) i.e. adverse effects that are predicted to occur in relation to separate topic areas interacting to produce a further effect that is not material in the decision-making process. As noted above, this could reduce further once timetabling information is known by reducing the number of bus movements and / or fully electric buses are implemented (secured through planning condition 34), reducing the acoustic element to negligible and subsequently removing that effect interaction. The permanent effects to the Rifle Range Track were considered neutral (non-significant) in Part 2. However, socio-economic effects may occur if the Scheme were to prevent existing access or access for future development (subject to obtaining planning permission) along the Rifle Range Track, and this combined with other impacts which reduced the ability of Clare Hall to offer an attractive academic institution for visitors and students. This impact could combine with the significant adverse noise effect (subject to mitigation secured through planning condition 34) on Clare Hall including, the slight-moderate adverse landscape and visual impacts and the minor adverse heritage impacts to make Clare Hall less able to compete with other academic institutions to attract students and visitors to use its facilities. Impacts on access are mitigated by the Applicant's commitment to maintain existing and future access rights provided they are exercised safely in conjunction with the operating busway. In addition, as noted above, noise effects could reduce further once timetabling information is known, by reducing the number of bus movement and / or fully electric buses are implemented (secured through planning condition 34), reducing the acoustic element to	

Common receptor	Residual Effects (above negligible / neutral)	Effects due to impact interactions	Mitigation
		negligible and subsequently removing its effect interaction. However, the interaction between landscape and visual and heritage would remain. With regards to Table 4-1 above, it is considered that these impact interactions could give rise to a socio-economic effect on Clare Hall that is slight adverse (non-significant) i.e. adverse effects that are predicted to occur in relation to separate topic areas interacting to produce a further effect that is not material in the decision-making process. Potential minor beneficial permanent socio-economic effects may arise from improving access to Clare Hall from the west of Cambridge, through the increased number of individuals that can access and engage with the College's resources from the surrounding community. With regards to Table 4-1 above, it is considered that this could give rise to a socio-economic effect on Clare Hall that is slight beneficial (non-significant) i.e. beneficial effects that are predicted to occur in relation to separate topic areas interacting to produce a further effect that is not material in the decision-making process.	



5 Article 5

- 5.1.1. The Applicant has proposed a modification to Article 5 of the Order which would authorise additional works within affected plots. This section considers whether the additional flexibility sought could give rise to any change in the conclusions of the environmental assessment.
- 5.1.2. The application for the Scheme was accompanied by a request for deemed planning permission **[CD1-14]**. The main control on the authorised works is the conditions that would be attached to the deemed planning permission in accordance with which the authorised works must be constructed and operated. An updated list of conditions **[CD29-12 and CD29-13]** was agreed with Greater Cambridge Shared Planning Services and submitted to the inquiry on 19th September 2025. These conditions contain the following controls which ensure that the authorised works will not go beyond what has been assessed in the ES:
- Condition 2 – which states that the development permitted must be carried out in accordance with the approved planning direction drawings. These drawings are listed at Schedule 2 to the request for deemed planning permission **[CD1-14]** and consist of the Scheme Location Plan **[CD1-16.01]**; the Existing Site Plans **[CD1-16.02]**; the Proposed Site Plans **[CD1-16.04]**; the Proposed Site Sections **[CD1-16.05]**; the M11 Overbridge General Arrangement **[CD1-16.06]**; the Bin Brook Bridge General Arrangement **[CD1-16.06]**; and the Construction Plans **[CD1-16.07]**. Together the Proposed Site Plans **[CD1-16.04]**; the Proposed Site

Sections **[CD1-16.05]**; the M11 Overbridge General Arrangement **[CD1-16.06]**; the Bin Brook Bridge General Arrangement **[CD1-16.06]**; and the Construction Plans (showing the location of construction compounds) **[CD1-16.07]** restrict the development which is permitted to be carried out to the development which has been environmentally assessed;

- Conditions 14 and 17 – which require a surface water drainage scheme and a detailed hard and soft landscaping scheme respectively to be submitted and approved by the Local Planning Authority (LPA). The hard and soft landscaping scheme will also deal with the layout of the replacement open space, as per condition 27;
- Condition 19 – which requires the LPA's prior written approval of location, layout, scale and external appearance for any building, busway stop, the M11 overbridge, Bin Brook Crossing and associated structures, environmental noise barriers, and retaining structures as well as approval of sample finishes and materials;
- Condition 20 – which requires the LPA's prior written approval of location, design and layout for the temporary haul road, any means of access, and any pedestrian, cycle or equestrian route;
- Condition 21 – which requires the LPA's approval of an artificial lighting impact assessment and mitigation scheme;
- Condition 22 – which requires the LPA's prior written approval of the location, layout, scale and external appearance of the Scotland Farm Travel Hub including internal roads, footpaths and cycleways, parking



arrangements, buildings, cycle parking, bus stops and shelters, other street furniture;

- Condition 23 – which requires the LPA's prior written approval of an electric vehicle charge point scheme;
- Condition 24 – which requires the LPA's prior written approval of a CCTV scheme including details for the appearance of the height, type and position of CCTV within the travel hub site;
- Condition 28 – which requires the LPA's written approval of a scheme for traffic signage and road markings prior to public use of the busway; and
- Condition 29 – which requires the LPA's written approval of a scheme for traffic signage and wayfinding for the Scotland Farm Travel Hub prior to its public use.

5.1.3. In addition, condition 35 (this was previously condition 34 before the new condition 34 to restrict bus movements during the night time (00:00 to 06:00) and shoulder periods (23:00 to 00:00 and 06:00 to 07:00) was proposed) ties the approval of any matter under a condition containing a tail piece to the LPA being satisfied that the subject matter of the approval will not give rise to materially new or different environment effects from those assessed in the ES.

5.1.4. Schedule 2 to the draft Order broadly covers works in respect of drainage, landscaping, environmental mitigation, access roads, bridleways, footpaths and the park and ride site and travel hub. Arguably the description of the works in Schedule 2 is broad enough to cover the engineering works and street works listed in Article 5. However, during detailed design there is the possibility that, for example, signage or lighting which is

not part of the Schedule 1 works could be required in a plot not listed in Schedule 2. The additional flexibility sought by the Applicant will ensure that the works listed in Article 5 can for example, be undertaken in relation to the park and ride site and travel hub. However, the flexibility sought cannot extend beyond what has been shown on the proposed site plans and sections, and the detail is subject to approval under the conditions of the request for deemed planning permission.

5.1.5. Accordingly, the additional flexibility sought in the Order would not enable development outside what has been assessed in the ES, because the ES has assessed what is shown on the planning direction drawings and this detail is secured under the conditions of the request for deemed planning permission.



6 Conclusions

- 6.1.1. This voluntarily provided ESA3 has been prepared to provide additional information on downstream mitigation for the expected increase in velocity in the Bin Brook channel immediately downstream of the busway crossing, an assessment of the landscape and visual impact of the proposed Bin Brook bridge and details of proposed mitigation for construction and operational noise. ESA3 also assesses inter-related effects on Clare Hall. Additionally, ESA3 considers whether there are any implications arising from the Applicant's proposal to modify Article 5 of the draft Order to provide additional flexibility. ESA3 also provides an assessment of the effects of the Scheme on Conduit Head Road Conservation Area. In summary the ES remains sound and specifically, the following has been concluded:
- 6.1.2. **Flood Risk (including Ecology and Landscape and Visual Effects)** - the changes in in-channel cross-sectionally averaged maximum velocity of the scale predicted by the Applicant's flood risk model do not materially increase flood or erosion risk and therefore there are no likely significant effects. Consequently, no mitigation is required, and consequently no mitigation measures are proposed or assessed.
- 6.1.3. Even if changes in in-channel cross-sectionally averaged maximum velocity were to occur at a greater scale, they would not materially increase flood or erosion risk for a natural channel of the type observed on site and therefore the differences would still not result in any likely significant effects or require mitigation.
- 6.1.4. Notwithstanding, if scour protection is required between the proposed Bin Brook crossing and Herschel Road crossing, no significant environmental effects are expected from employing this as mitigation, including on the features designated in relation to the Bin Brook City Wildlife Site.
- 6.1.5. **Landscape and Visual** - the landscape and visual effects associated with the proposed Bin Brook bridge are consistent with, and adequately represented within, the findings of Technical Report 8 – Landscape **[CD1-11.08.1]**. The methodology and application of the LVIA remain robust, and no changes to the original assessment criteria or conclusions are required.
- 6.1.6. The proposed bridge would form a modest, low-lying feature with a limited footprint within both Landscape Character Area (LCA) 3B – Bourn Tributaries Lowland Farmlands and Townscape Character Area (TCA) 2 – West Cambridge. Its scale, considered design, and embedded mitigation planting would ensure that it integrates effectively into the surrounding landscape and townscape context.
- 6.1.7. From a visual perspective, the bridge would be perceived only intermittently through intervening vegetation and would not materially alter the overall composition or character of the affected views. No significant visual effects are predicted for any receptor during either winter Year 1 or summer Year 15 conditions.
- 6.1.8. In addition, the Residential Visual Amenity Assessment undertaken in relation to the Salje Building and taking into consideration the construction and operation of the Bin Brook Crossing, has concluded no significant visual effects will occur



and the proposed bridge would not breach the Residential Visual Amenity Threshold.

- 6.1.9. **Noise** – with the application of the draft CoCP **[CD1.26]** and best practicable means, noise and vibration at noise sensitive receptors will be reduced to non-significant levels during construction. During operation, the number of diesel bus movements during the 06:00 – 07:00 and 23:00 – 00:00 periods could be reduced at Clare Hall and / or could be mitigated through the use of fully electric buses, which will be secured through planning condition 34. No bus movements will occur between 00:00 and 06:00. It is concluded that residual noise and vibration effects will not be significant during construction or operation.
- 6.1.10. If additional operational mitigation measures, including glazing and ventilation, are applied, the resulting residual noise effect would also be negligible non-significant. However, provided that work was designed and enacted sensitively, the level of harm to the building's character as a Grade II* listed building would be minor adverse (non-significant) equating to the lower end of the scale of less than substantial harm.
- 6.1.11. **Effects due to impact interactions at Clare Hall** – an assessment of impact interactions (e.g. the adverse effects of noise and visual effects interacting) has considered temporary and permanent environmental effects on Clare Hall. It has concluded that the impact interactions would not result in any effects above slight adverse (non-significant). These effects are not material to the decision making process.
- 6.1.12. **Conduit Head Road Conservation Area** - the Scheme would result in no change to Conduit Head Road Conservation Area,

and would result in no harm in National Planning Policy Framework terms.

- 6.1.13. **Article 5** – the conditions attached to the deemed planning permission **[CD1-14]**, and outlined within **Section 5**, provide a comprehensive and enforceable framework that ensures the authorised works remain strictly within the scope of works assessed in the ES. While the description of works in Schedule 2 is sufficiently broad to encompass the necessary engineering and street works, any additional flexibility sought is firmly constrained by the approved planning drawings. Therefore, the Order would not permit development beyond what has been assessed in the ES.

APPENDIX 1 - RESIDENTIAL VISUAL AMENITY ASSESSMENT



Technical Appendix 1 – CtoC Residential Visual Amenity Assessment

DATE:	01 October 2025	CONFIDENTIALITY:	Confidential
SUBJECT:	Residential Visual Impact Assessment		
PROJECT:	Cambourne to Cambridge	AUTHOR:	Chris Carolan
CHECKED:	Rebecca Rylott	APPROVED:	Rebecca Rylott

INTRODUCTION

This Technical Appendix (TA) has been prepared to accompany **Technical Report 8 – Landscape [CD1-11.08.04]**. The purpose of the Residential Visual Amenity Assessment (RVAA) is to identify potential effects of the Scheme on the visual component of residential amenity, and to make a professional judgement on whether those effects would breach the Residential Visual Amenity Threshold and if they can be mitigated.

This is distinct from the assessment of ‘residential amenity’ as a planning matter that involves consideration of several aspects (including noise, light, and vibration disturbance), of which residential visual amenity is a single component. The RVAA is therefore limited to the consideration of visual effects on the residential visual amenity of residential properties only.

The Landscape Institute’s, Residential Visual Amenity Assessment Technical Note 2/19¹ (the ‘RVAA guidance’) is founded on the principles and processes set out in GLVIA3 [CD18-22] and ‘Residential Visual Amenity’ is defined in the RVAA guidance as:

“the overall quality, experience and nature of views and outlook available to occupants of residential properties, including views from gardens and domestic curtilage. Residential Visual Amenity is one component of ‘Residential Amenity’”.

The RVAA guidance advises further that the *“aim is to identify those residential properties whose visual amenity has the potential to be affected to the largest magnitude of impact. Properties with the highest magnitude of effect are assessed further culminating in a professional judgement as to whether the Residential Visual Amenity Threshold is likely to be reached at this property or not.”* This is a separate although related consideration from the assessment of visual effects resulting from the Scheme and is restricted to residential properties only.

This RVAA has been prepared to consider the potential effects of the Scheme on the visual amenity of the occupants of the Salje Building, Clare Hall, an accommodation building for Clare Hall as an academic institution. It is not a residential dwelling with permanent occupiers and as such there is a question as to whether an RVAA is appropriate at all, but we have carried out the assessment to provide as much information to the inspectors as possible.

This TA is structured as follows:

- Residential Visual Amenity methodology;
- Scope of assessment; and
- Residential Visual Amenity Assessment.

¹ Landscape Institute (2019). *Residential Visual Amenity Assessment Technical Note 2/19*. Available at: [tgn-02-2019-rvaa.pdf](#).

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RVAA METHODOLOGY

The RVAA accords with GLVIA3 and RVAA guidance which advises that the “*purpose of carrying out a Residential Visual Amenity Assessment (RVAA) is to form a judgement, to assist decision makers, on whether a proposed development is likely to change the visual amenity of a residential property to such an extent that it becomes a matter of ‘Residential Amenity’.*”

In summary, the methodology for RVAA involves a four-step process as follows:

- “*Step 1: Define Study Area and identify properties to be assessed.*
- *Step 2: Evaluate baseline visual amenity of properties.*
- *Step 3: Assess change to visual amenity of properties and identify properties requiring further assessment.*
- *Step 4: Detailed [RVAA] assessment of individual properties identified.”*

Residential amenity is a planning matter that involves a wide number of effects (such as noise, light, and vibration disturbance) and benefits, of which residential visual amenity is a single component. Other factors affecting residential amenity such as noise and vibration are not considered as part of this assessment.

The RVAA is therefore limited to the consideration of visual effects only. The planning system recognises that effects on residential visual amenity are considered as a matter of public interest. This matter has been examined at several public inquiries in the UK where the key determining issue was not the identification of significant effects on views, but whether the Scheme would result in a breach of the Residential Visual Amenity Threshold. Examples provided in the RVAA guidance include “*‘blocking the only available view from a property’, or ‘overwhelming views in all directions’; and ‘unpleasantly encroaching’ or being ‘inescapably dominant from the property’.*”

The nature of these effects would need to be so severe that they would result in unsatisfactory living conditions, leading to a property being regarded, objectively, as an unattractive (as opposed to a less attractive) place in which to live. It should be noted therefore that the experience of a significant view of the Scheme is not the same as a breach of the Residential Visual Amenity Threshold.

Consequently, the RVAA provides a more detailed assessment of the Salje Building to the Scheme than that included in the LVIA in Technical Report 8 [CD1-11.08.04]. This allows the assessor, and consequently the determining authority, to make a judgement as to whether the residents occupying this property would be likely to sustain unsatisfactory living conditions which it would not be in the public interest to create.

The construction effects of the Scheme will be temporary, extending over a 24-month period and involve the introduction of additional construction related features and intrusive elements into the landscape that may have an impact on visual amenity. Adjacent to the Salje Building, the construction activities are anticipated to take place over the summer months when trees are in full leaf and extend over a shorter

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timeframe of around 6 months. The construction activities include plant, cranes, increased road use from construction traffic, and temporary lighting, however, controls and measures are embedded in the Scheme to mitigate the potential impacts as a result of construction activities (see the CoCP [CD1-26] for full construction phase details).

Scope of assessment

This RVAA focuses specifically on the potential effects of the Scheme on the outlook and visual amenity of a single residential receptor: **Salje Building, Clare Hall**. There are no deficiencies in the assessment within Technical Report 8 [CD1-11.08.04] and we would under normal circumstances not provide an RVAA for any property for a Scheme of this scale and nature, however, we have willingly provided the RVAA as an additional assessment over and above the fully compliant assessment which we have already undertaken.

The study area has accordingly been limited to the curtilage of the **Salje Building, Clare Hall**, with consideration given to those parts of the property from which the Scheme may be perceived, including primary living spaces, private garden areas and principal elevations.

The assessment therefore considers:

- The baseline visual context of the **Salje Building, Clare Hall**, including its orientation, amenity space and existing screening or boundary features;
- The nature and extent of visibility of the Scheme from the property; and
- The likely effects on outlook and overall experience of visual amenity, having regard to the criteria and thresholds set out in recognised guidance.

RESIDENTIAL VISUAL AMENITY ASSESSMENT

The RVAA has been informed by visiting the private property on 2nd October 2025 along with observing the property from public locations and through the examination of publicly available aerial and ground level photography as well as map-based data, and the analysis of Zone of Theoretical Visibility plots [CD1-11.08.03, PDF p2]. As such, the RVAA represents an informed judgement of the likely visual effects and the consequential effects on residential visual amenity.

The assessment has allowed for the screening effects of vegetation with the consideration of woodland, individual trees, hedgerows and garden vegetation screening; where this includes mature vegetation, a degree of permanence has been assumed in the assessment. The RVAA considers the likely views from the main living areas of the property and main garden areas.

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Residential Visual Amenity Assessment

Salje Building, Clare Hall

Description



Above: View of Salje Building accommodation south elevation
Image Capture: October 2025



Above: Aerial photograph of Salje Building accommodation
Google Imagery ©2025

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Salje Building, Clare Hall	
	The Salje Building is accessed from Herschel Road to the west of the Grange Road. It is a three-storey building with garden areas to the south and east, and open space with grove trees to the west. The main windows and views look east and west, with the eastern façade comprising balconies. The southern façade includes 5 no. small windows, two of which are directly behind the West Court building. A field boundary hedgerow and mature garden trees are located to the south and east of the property and provide screening in views south and east.
Sensitivity	For the purposes of visual amenity assessment, residential properties are typically regarded as being amongst the most sensitive receptor types. This reflects the fact that occupants experience views from their homes and associated private gardens on a daily basis, often for extended periods, and place particular value on the quality of their immediate outlook. The Salje Building represents a receptor where the quality of outlook is directly relevant to the day-to-day living environment. Primary living spaces and balconies and private garden areas are orientated towards the direction of the Scheme, increasing the likelihood of sustained visual interaction. The private garden and outdoor areas are valued for relaxation and domestic use, where the quality of the visual setting contributes directly to residential amenity. Accordingly, for the purposes of this assessment, the Salje Building is treated as a receptor of high sensitivity to changes in visual amenity, consistent with established guidance.
Magnitude of change	<u>Construction</u> Construction works associated with the Scheme would be partly visible through or above intervening hedgerow and garden vegetation for a short period of time (6 months). The Scheme is at the property boundary at a short distance, affecting the views to the south. This would include contrasting colours, construction traffic, sound and movement of machinery and construction workers. The building in front of the Salje Building at West Court, Clare Hall would screen some of the views south and west along with existing vegetation within the gardens south and east. The magnitude of change would be Low. <u>Operation - Year 1 (Winter)</u> During the winter period at year 1, when existing vegetation is not in full leaf, the proposed Bin Brook Bridge and associated earthworks would be more perceptible from

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Salje Building, Clare Hall			
	the property. While the existing West Court building and boundary planting and intervening vegetation would continue to screen the view, the screening effect would be reduced, resulting in filtered views of the bridge structure and occasional visibility of passing buses. These elements would nonetheless remain set within a wider vegetated context, and their presence would be perceptible rather than dominant. The magnitude of change at Year 1 (winter) is assessed as low. <u>Operation - Year 15 (Summer)</u> By Year 15, with established growth of proposed planting and the presence of mature intervening vegetation in summer condition, visibility of the Scheme including the bridge and associated activity would be more effectively reduced. Any views are anticipated to be glimpsed only, through breaks in vegetation, with buses perceived occasionally and in a fleeting manner. The visual effect would be limited in frequency, duration and clarity. The magnitude of change at Year 15 (summer) is assessed as low-negligible.		
Assessment			
Phase of the Project	Construction	Operation (Year 1)	Operation (Year 15)
Magnitude of change	Low	Low	Low-negligible
Level of effect	Slight	Slight	Negligible
Duration	Short - term	Long - term	Long - term
Type of effect	Adverse	Adverse	Neutral
Residential Visual Amenity	It is concluded that the Scheme would not result in any significant adverse effects and as such <u>could not breach the Residential Visual Amenity Threshold</u> or otherwise affect living standards or render the property an unattractive place to live when judged objectively and in the public interest.		

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SUPPLEMENTARY PHOTOS (IMAGE CAPTURE: OCTOBER 2025)



Above: Salje Building east elevation

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Above: Salje Building south elevation

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Above: Salje Building west elevation

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Above: View from Salje Building looking south-east

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Above: View from Salje Building looking south

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Above: View from the Track south of Salje Building looking north

APPENDIX 2 – CONDUIT HEAD ROAD CONSERVATION AREA

Designated in 1984, Conduit Head Road Conservation Area is located 150m to the north-west of the Scheme boundary at its closest point: JJ Thomson Avenue, as seen in **Figure 1**. The conservation area is characterised by large, detached, residential dwellings dating from the early to the late-20th century. The Conservation Area Appraisal (Cambridge City Council, October 2009) states that, “A number of Modernist houses, built in the 1930s and 1960s, are of particular note”. The conservation area includes five designated heritage assets and two buildings of local interest. The five designated heritage assets are all located on Conduit Head Road and comprise the following:

- Grade II listed White House: Modernist house built in 1930 and designed by New Zealand born architect George Checkley (1893-1960);
- Grade II listed Salix: Modernist house built in 1934 and extended in 1936. Connected to physicist Mark Oliphant (1901-2000) who went on to become a member of the British Mission to the Manhattan Project;
- Grade II* listed Willow House: Modernist house built in 1932 and designed by George Checkley;
- Grade II listed Spring House: built 1965-67 and designed by Colin St John Wilson (1922-2007); and
- Grade II* listed Shawns: Modernist house built in 1938 and designed by Margaret Justin Blanco White (1911-2001).

The conservation area has two distinct character areas:

- Area along Conduit Head Road: characterised by large residential dwellings, including three of the so-called ‘White houses’: Grade II listed White House, Grade II listed Salix, and Grade II* listed Willow House (all of which are located within the Scheme’s 250m study area); and
- Area of Bradrushe Fields: houses of a uniform design set back from the road, with buildings dating from the 1990s.

Three designated heritage assets located within the conservation area were assessed in Technical Report 7: Heritage and Archaeology [CD1-11.07.2, paras. 6.3.67 - 6.3.75, pp. 85 – 86]; these were Grade II listed White House, Grade II listed Salix, and Grade II* listed Willow House. The two Grade II listed buildings were assessed as being of **high significance** and the Grade II* listed Willow House was assessed as being of very high significance. Setting was assessed as making a **high contribution** to these assets’ significance.

The Conservation Area Appraisal notes that Conduit Head Road, the main arterial route through the conservation area, is ‘a high quality’ and ‘high status road’, and that the relationships between the built form and their surroundings ‘are particularly important’ to the character of both areas. Neither character area contains any public open space.

Conduit Head Road Conservation Area is a heritage asset of **high significance**.



Assessment of setting

The conservation area is defined and experienced by the visual and historic connections of its individual residential dwellings with each other and with the conservation area itself, particularly the five designated heritage assets located on Conduit Head Road. The leafy surroundings of the conservation area contribute to its significance, giving the asset a semi-rural feel, despite the presence of surrounding urban development, and is a reminder of its position at the very west of Cambridge. Its narrow dead-end roads, and off-road parking mean that traffic does not intrude into the asset, although traffic noise from the nearby A1303 Madingley Road is apparent, particularly at the southern half of the asset. Visual traffic impacts from the A1303 are limited, are only apparent on approaches to or from the southern part of the conservation area on Conduit Head Road, and do not contribute to the asset's significance.

Taken overall, setting makes a **high contribution** to significance.

Impact Assessment

Technical Report 7: Heritage and Archaeology [CD1-11.07.2, paras. 7.4.84, 7.4.88 & 7.4.92, pp. 104 – 105] reports that the Scheme would result in 'no harm' to Grade II listed White House, Grade II listed Salix, and Grade II* listed Willow House.

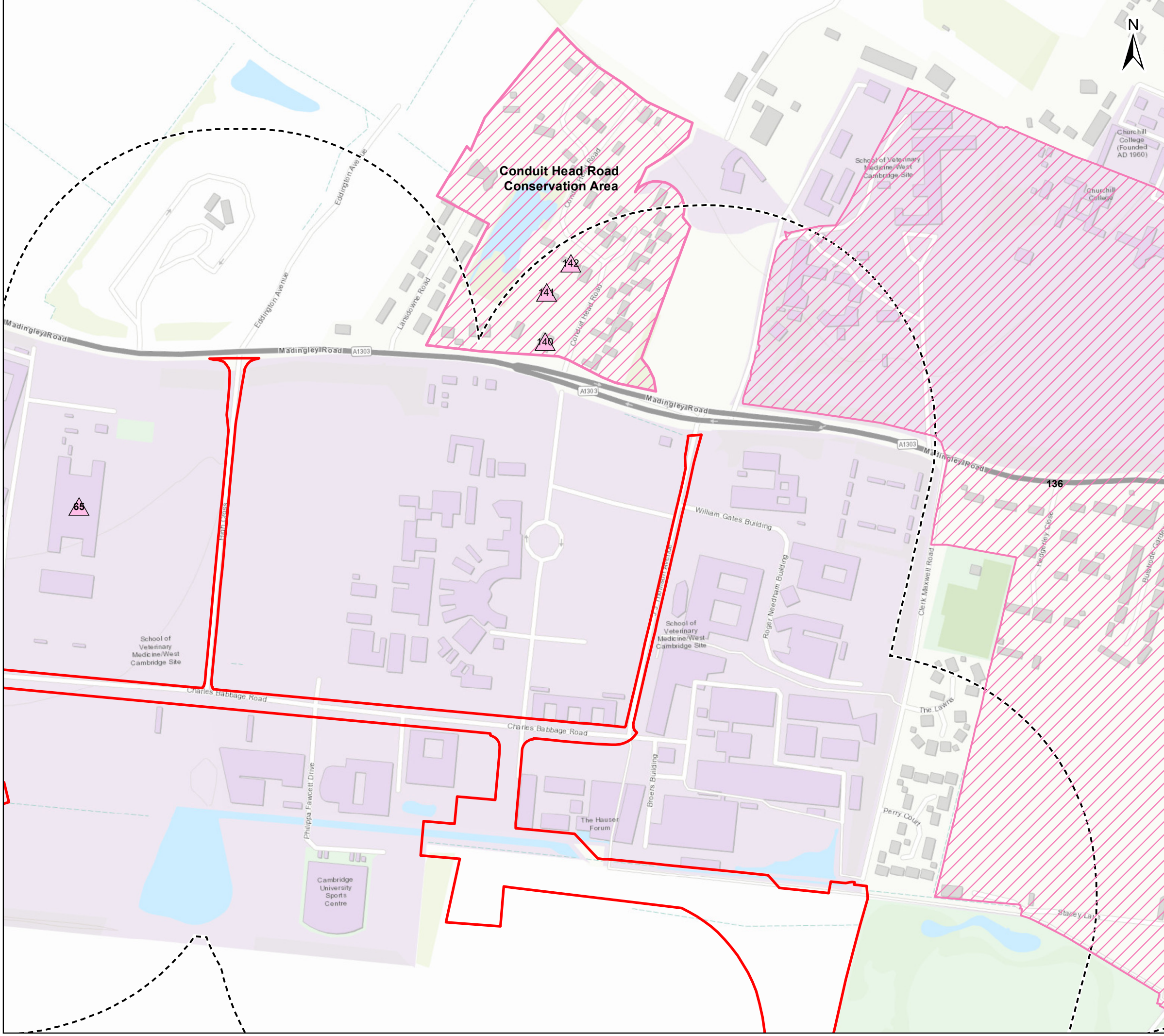
Although the Scheme includes JJ Thomson Avenue and the unnamed road west of the Veterinary School within its boundary, no permanent development is proposed along either road. These two roads are included in the Scheme under 'Powers of Limited Temporary Use of Land and Acquisition of Permanent Rights' [CD1-12.01, sheet 15, p. 17]. The road to the west of the Veterinary School would be an access route from Madingley Road to a compound south of Charles Babbage Road [CD1-16.07, Sheet 15, p. 17]. The Scheme would not involve any new built form along JJ Thomson Avenue or the unnamed road west of the School of Veterinary Medicine [CD1-16.04, Sheet 15, p. 17]. New public transport stops, traffic signals and at-grade crossing are proposed along Charles Babbage Road, which is also the proposed bus route.

Use of the road west of the Veterinary School as a site access point would result in a potential increase in traffic; however, this would not be of sufficient magnitude to add to the effect of noise from traffic along Madingley Road that is already apparent in the setting of Conduit Head Road Conservation Area. The works along Charles Babbage Road from the Scheme would be over 300 metres to the south, and would not be seen in views out from the conservation area along Conduit Head Road. Any new bus traffic arising from the scheme along Charles Babbage Road would not impact views out from the conservation area.

Taken overall, the Scheme would result in **no change** to Conduit Head Road Conservation Area, and would result in **no harm** in National Planning Policy Framework terms¹².

¹² National Planning Policy Framework (2025). Available online at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>.

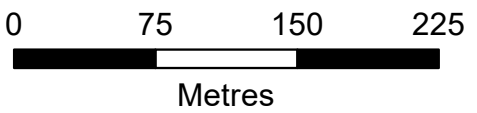




Key

- Listed Buildings
- Conservation Area
- CtoC Scheme Boundary
- Study area 250m

Note: The asset labelling in figures refers to the gazetteer numbers, excluding the prefix A



Client:	Greater Cambridge Partnership		
Project:	Cambourne to Cambridge - Public Inquiry		
Title	Figure 1 - Location of Conduit Head Road Conservation Area		
Date:	10/6/2025	Scale:	4,000 @ A3
Drawn:	AA	Checked:	TW
		Approved:	TW



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