LAND NORTH OF CAMBRIDGE NORTH STATION

Appendices to the Proof of Evidence of Jeremy Smith BSc (Hons), Dip LA, CMLI on Landscape and Visual Matters

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PINS Ref: **APP/W0530/W/23/3315611**

SLR Ref: 403.064598.00001
Version V1
May 2023

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DRAWINGS

CN-054: Viewpoint E5 (Model View of AAP 2021)

Appendix A

Methodology for Preparing Zone of Theoretical Visibility (ZTV)

A Zone of Theoretical Visibility (ZTV) has been produced (refer to **drawing CN-003**) to provide an objective assessment of the potential theoretical visibility of the proposed development. The proposed building heights are shown on the ZTV and area taken from the parameter plan.

The ZTV includes only the most significant areas of existing vegetation, such as larger hedgerows and trees, and does not include any proposed mitigation planting. The height of trees on the site is taken from the arboricultural survey and LiDAR data, but vegetation heights in the wider landscape are based upon site assessment and conservative height estimates (for example 10 metres for mature trees is approximately half to a third of the height of many mature trees in this part of England). Therefore, the extent of visibility as defined on the ZTV is conservative.

Existing Features

landform data or the site and its context has been derived from a detailed topographic survey, and landform data for the surrounding areas is derived from OS Terrain 5 data. For barriers offsite, vegetation heights are derived from a combination of LiDAR data and conservative estimates.

Proposed Development

The ZTV has been based on the parameter plan, which was provided in 3D computer model by Vu City**.**

To generate the ZTV the receptor point grid interval was set to a 25m grid with an eye height of 1.5m. This means that LSS was able to calculate, for every point at 25 metre intervals in the surrounding landscape, whether the proposed development would be visible. In addition to the grid intervals representative target points were selected across the target area.

The ZTV output file from LSS calculates, for every receptor point, not just whether the development can be seen, but also what vertical angle of the development can be seen. This provides a useful guide as to what the likely magnitude of visual impact will be at any point around the site. For comparison, a two-storey house, at an average height of 8m, would subtend a vertical angle of 4.58˚ at 100m, 2.29˚ at 200m, 0.92˚ at 500m and 0.46˚ at 1km.

This ZTV assessment includes all visible angles over 0.25 degrees, since field survey identified that vertical angles of less than 0.25 degrees would be screened by intervening vegetation and/or buildings.

Appendix B

Methodology for Preparing Photography and Photomontages

Introduction

Type 1 Winter Photographs were taken in February 2023 for representative viewpoints 2, 4, 5, 8, 9, 10, 14, 15, 16, 20, E1, E2, E5, E6, P1, P4, P5, and P6.

In addition, Type 4 photomontages have been prepared by Vu City for the following viewpoints:

- **Viewpoint 5**
- **Viewpoint 8**
- **Viewpoint 9**
- **Viewpoint 15**
- **Viewpoint 16**
- **Viewpoint E5**

The selected representative viewpoints were agreed between Bidwells and the Council as part of the consultation process for the planning application. The selection of the photomontage viewpoints focuses on those areas where the visual effects would be relatively high, and/or those points where the Council or third parties have expressed particular concerns about views.

The photomontage views include four separate images (in addition to the existing view:

- **The first image is a verifiable image of the appeal proposals**, with the detailed element fully rendered and the outline element shown as shaded blocks.
- **The second image provides a verifiable model view of the heights recommended in the Regulation 18 AAP 2020**. The bottom of the range of recommended heights is shown in opaque red shading, whereas the top of the range of suggested heights is shown in translucent red.
- **The third image is a verifiable model view of the heights depicted on Diagram 1 at page 86 of the LCVIA**. The bottom of the range of recommended heights is shown in opaque blue shading, whereas the top of the range of suggested heights is shown in translucent blue.
- **The fourth image depicts a verifiable model view of the heights recommended in the regulation 19 AAP 2021**. The bottom of the range of recommended heights is shown in opaque yellow shading, whereas the top of the range of suggested heights is shown in translucent yellow. Landmark areas are shown with a yellow outline and no shading.

Viewpoint Photographs

Photography was obtained using a full frame digital Single Lens Reflex (DSLR) camera mounted with a 50 mm 'fixed' lens (predominately Nikon D600). The camera was mounted on a tripod with a panoramic head in order to obtain a stable platform and the single frame and panoramic views. The position of the tripod was recorded with a handheld GPS device. In addition to recording the location of the viewpoint, observations relating to time of day, weather, cloud cover, and visibility were recorded.

Following completion of the fieldwork, the photography was reviewed and the clearest images selected for the production of panoramic images. In some cases, small adjustments were made to the images through the use of Adobe Photoshop software in order to improve clarity. The panoramas were then prepared through the joining of individual frames in Photoshop to generate 360 degree panoramas.

Viewpoint photographs are presented as a cylindrical panoramic image at A1 width. Presented field of view is 39.6° x 27° (Horizontal x Vertical). Viewing distance is 50cm.

Planting Heights

The montages show planting at year 15, with climbers on elevations fully established and tree heights at around 7.5 to 8m high. These heights are based upon conservative growth rates for very young nursery stock (for example 30-45cm transplants), and assume growth rate of approximately 30cm for the first three years after planting, and 50cm for each year up to year 15 (**growth rates based upon IEMA EIA Quality Mark article prepared by The Landmark Practice**).

It is important to note that if advanced nursery stock is used these tree heights could be achieved in the first few years after construction, and fully mature heights for some of the chosen tree species could exceed 25 metres.

Detailed Methodology

This Technical Methodology is produced as part of the requirements of the Landscape Institute Visual Representation of Development Proposals (VRDP) Technical Guidance Note 06/19 (17 September 2019), which states:

> '*2.3 Visualisations should: …. be accompanied by appropriate information, including a Technical Methodology and **required data within page title blocks** (Appendix 7.2 and 10);*'

In Table 2 – Visualisation Types 1-4 (VRDP) indications are given in terms of the detail of reporting required in the Technical Appendix, under 'Reporting Methodology and Data Sources'. This indicates that an outline description of sources is recommended and a methodology for Visualisations Type 1 and 2, with increasing detail through Visualisation Type 3 to Visualisation Type 4.

Appendix 7 paragraph 7.2.2 of the VRDP states;

> *'A Technical Methodology should be provided as an Appendix to Type 3 and 4 visualisations. This will assist recipients with understanding the level of technical approach and also explain reasoning for any departures from standards. This should be proportionate to the requirements of the assessment and the required images. See Appendix 10.'*

The VRPD (paragraph 3.5.2) identifies 4 types of visualisations as follows, with Type 1 being the least technically sophisticated and Type 4 the most sophisticated:

- Type 1 annotated viewpoint photographs;
- Type 2 3D wireline / model;
- Type 3 photomontage / wireline; and
- Type 4 photomontage / wire (survey / scale verifiable).

Table 1 - Relationships between Purpose, User and Visualisation Types (VRDP) indicates the relationship between the types of visualisation and the purpose and intended users of the various visualisations. It is noted in 3.5.6 of the VRDP that categories of user and purpose (i.e. A-D) illustrate four convenient levels along a scale and provide a broad indication as to the appropriate visualisation types for the different levels of users and purposes not a definitive relationship.

Paragraph 3.7.1 of the VRDP guidance states:
'For any given project for which visual representation may be required, the proposed approach to visualisation should be set out in a brief description, explaining:

- *the anticipated Purpose / Users;*
- *the indicative assessment of Sensitivity and Magnitude and resulting likely indicative overall Degree or Level of Effect; and*
- *other factors influencing the selection of the Visualisation Type*.'

Table 1
Visualisation Type

Factor	Proposed Approach
Purpose / Users	Planning Appeal for EIA development. Users: Planning Authority, Council's landscape consultant, public and consultees.
Indicative overall Assessment levels	Sensitive receptors around the site, who may experience a high magnitude of effect as proposed development would be close in several views.
Other factors influencing visualisation type	Concerns regarding landscape and visual effects were expressed in pre-app consultations. Landscape reason for refusal at appeal.

Appendix 10 of the VRDP identifies an 'Indicative Listing' of information for each project that should be provided within the overall Technical Methodology. The required information is contained in this document (Appendix 2A) in Table 2: Overall Technical Details.

In addition, Appendix 10 of the VRDP also identifies the technical information required **Per Viewpoint** and to be provided on each page of the photograph / visualisation in a series of figure notes. This information is recorded on the visualisation drawings prepared for this assessment.

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