Methodology for the production of Illustrative Photomontages

September 2019 – Revised May 2020 (Amended Planning Application)

This document summarises LHC's approach and specification for preparation of illustrative photomontages

1. Summary

LHC's methodology is compliant with relevant sections of: The Landscape Institute/IEMA Guidelines for Landscape and Visual Impact Assessment and the revised Landscape Institute Advice Note 01/11 (Photography and photomontage in landscape and visual assessment).

High resolution photographs were taken from locations within the visual envelope of the site. Viewpoints were identified during the initial site and context appraisal and reviewed during pre-application discussions with Exeter City Council.

The viewpoints for illustrative photomontages were chosen to be representative of views from within the visual envelope, and also to include a sufficient number of existing site features to enable the 3D model of the proposed development to be accurately located within the views. An accurate site survey (topographical survey produced by Centre Line Survey and a 3D Model produced by Malcolm Hollis) was used to prepare a 3D model of the proposed development and the immediate surrounding buildings, and Ordnance Survey mapping and LiDAR height data (Digital Terrain Model) were used to model the wider context. The development model was imported into the wider context model to the correct (Ordnance Survey) co-ordinates. With a known camera position, photographic and surveyed existing visible features, the development model was then aligned to the photograph.

Note: All photomontages are illustrative, with the accuracy of visual representation varying depending upon weather conditions, the original photographic images, the accuracy of the 3D model and interpretation of materials and landscape elements in the final image. Photomontages should therefore be read in conjunction with the detailed planning application drawings including the existing and proposed plans, sections and elevations.

2. Photography

For each agreed photographic viewpoint location, a series of high-resolution photographs were taken with a full frame dSLR camera.

The location at which the photographs taken is recorded to allow the viewpoint to be accurately positioned in the 3D model.

2.1 Equipment Used for Photography

The following photographic equipment was used for the photography:

Full frame dSLR Nikon D610 camera with 50mm fixed lens (24mm lens used only when shooting restrictive views)

3. The Proposed Development

The 3D model of the proposed development was produced in Revit based on the topographical site survey. Accurate scale elevations and plans were produced by LHC to accompany the planning application.

A wider model of the site context was produced in a 3D modelling package using Ordnance Survey mapping and LiDAR levels information to produce an approximate landform. Buildings immediately adjacent to the site were accurately surveyed (including eaves and ridge heights) and included in the 3D model.

The 3D model was checked for accuracy against the architectural elevations and aligned to the ordnance survey plan. The materials specified were applied to the model.

Using EXIF data from each photograph, an exact time of photography was noted and a lighting system created in the 3D model to match the theoretical sunlight conditions at that time of day.

4. Aligning the Model and the Photograph

For each photomontage the recorded viewpoint location was identified in the model and a view set up based on the ground level and height at which the photograph was taken (c1.70m above ground level).

For each view, two renders are made from the 3D model from the same 'matched' 3D camera: one render shows only existing site and contextual model and the other showing the proposed development. Both renders are matched to the photographic field of view (matching the camera and lens used) in the 3D modelling package.

Using a photo editing package, Adobe Photoshop CC, the panoramic photography, existing site and context model and proposed development are aligned. Any residual distortions in the underlying panoramic photography are also matched at this stage.

5. Visibility and Perception of the Proposed View

With the rendered proposals aligned to the photograph, aspects of the proposed development that would be obscured by existing foreground or site features are masked. This process is performed on all views.

To achieve a level of perceived photo-realism, atmospheric conditions and further lighting effects are simulated.

6. Presentation

Each existing and proposed illustrative photomontage is presented on an A3 drawing sheet with a location plan and presentation of the existing and proposed image.

7. Night-Time Photomontages

The purpose of the night time photomontages is to illustrate the potential visual effect of the proposed light sources within the building and its immediate context when viewed from identified viewpoints within the visual envelope of the site.

Night time photographs were taken from the agreed viewpoints. The camera settings were reviewed on site to ensure that the photographs are representational of the view from the human eye in the location's night time environment. For consistency the settings were set to ISO:200, 3 second shutter speed and F-Stop:8 (unless otherwise specified). Each viewpoint was taken from the same location as the daylight viewpoint using a tripod.

Example images of similar buildings in the location around the site were taken at the same time using the same settings to provide a baseline set of precedent images.

The site model was developed to the full external lighting scheme for the proposed development (dwg no EHQ-HYD-XX-00-DR-ME-00010) and key existing light sources from the surrounding environment. The internal light sources have been estimated and generically modelled using 4 no GU10 LED spotlights (Watts:7.6W, Efficacy:72.6lm/W, light temperature: 3000k) per room and communal areas using ceiling mounted lighting (Watts:20W, Efficacy:120lm/W, light temperature: 4000k) at 2m intervals.

All windows and openings have been shown without window dressing or furniture, which are likely to obscure the light sources from the viewer. In reality, for much of the time, many of the windows will have curtains/blinds drawn and lights turned off (see precedent imagery for examples).

The model approximately models the light spread from the existing, internal and external light sources onto the proposed building elevations to demonstrate the effect of light spill on the external walls.

Renders were produced using an unbiased render engine (Maxwell Render) along with data from the M&E drawings and manufacturer specifications for an accurate visual representation. These views do not account for atmospheric particles and it does not include less significant environment lighting to the surrounding area.

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