Virtual View

Photo Simulation Methodology

VIRTUALVIEW
3D VISUALISATION SPECIALISTS

INTRODUCTION

Qualifications and experience

1. My name is Jason Michael Blair.
2. I am a 3D Visualisation Specialist for the firm Virtual View Ltd (Virtual View). The company specialises in computer simulation.
3. I have been involved in the field of 3D visualisation for a total of 17 years. I hold a Diploma in Architectural Draughting from Otago Polytechnic 2001. I have worked for Virtual View since the beginning of 2007.
4. Virtual View's role includes working with planners, engineers, surveyors, architects, landscape architects and interior designers. The company uses photo simulations through to full computer-generated 3D video simulations to illustrate the concept of any proposed development - all of which are to virtual scale and location as would be viewed in the real world.

Involvement in project

5. Virtual View was engaged by Beachlands South Limited Partnership to produce photo simulations of the proposed development. I have worked on and overseen the production of these photo simulations. I have been assisted by other Virtual View staff, all of whom have extensive training and experience in 3D modelling and the production of photo simulations.

Expert Witness Code of Conduct

6. I confirm that I have read the Expert Witness Code of Conduct set out in the Environment Court's Practice Note 2014. I have complied with the Code of Conduct in preparing this evidence and agree to comply with it while giving oral evidence before the Hearings Panel. This evidence is within my area of expertise, except where I state that I am relying upon the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

METHODOLOGY FOR THE PREPARATION OF A PHOTO SIMULATION

7. The main objective of a photo simulation is to provide an image that, as realistically as possible, conveys the modification or change of a proposed activity. The most appropriate technical methodology has been applied to ensure the accuracy of what is depicted, in terms of its relative position, elevation, scale, and appearance. Photo simulations can never replace the real experience of being at a location, but they are a useful tool to assist in the decision-making process.

8. To achieve a photo simulation, a 3D model is rendered into a series of 2-dimensional photographs.

9. Viewpoint locations were chosen and taken by Stephen Brown. A full frame Nikon Z7 with a Nikon 24-70mm F2.8 S lens set to 50mm was used to take the photo panoramas from the designated positions.

10. The photo simulation positions were survey marked by handheld GPS and located on LIDAR DEM data.

11. The photos were then colour matched to ensure consistency throughout the image and manually stitched together to form a photo panoramic.

12. To achieve a photo simulation Virtual View Ltd firstly imported the supplied digital terrain model of the proposed landform. A 3D model of the indicative buildings for the site was then imported and coloured to represent the different zones. Landscaping was then added to the model to supplied heights and locations.

13. A series of 3D computer cameras within the simulation software were then created. They were positioned accurately to the corresponding survey marked photo position from which the photos were taken. The camera used depicts a real-world camera, including matching the focal length of the 50mm lens.

14. To duplicate the view through the real-world camera, it was necessary to match the landform data and reference points to the respective physical objects in the photo – thus ensuring an accurate horizontal and vertical alignment.

15. A sunlight system was then created which uses light in a system that follows the geographically correct angle and movement of the sun over the earth at a given location. Location, date, time, and compass orientation can be chosen. The simulations Virtual View Ltd prepared, depict the proposed development at the same, time and date as specified, and are simulated to resemble the natural lighting.

16. Within the 3D software, the new image was then rendered containing the accurately positioned 3D model over top of the original photograph.

17. Vegetation was overlaid using photo-editing software and was then checked against aerial photography from the site to ensure correct placement.

18. For the resulting photo simulations, the viewing scale is 50cm from the eye when printed at full scale A3. This scale produces an image that is 240mm high and was chosen as it is a comfortable distance to hold at approximately an arm's length, to appreciate what the view would be at scale in real life. (Refer to Figure 1 below for viewing scale).

19. Viewing on screen should be done tentatively as there are numerous variables such as screen size, zoom level and the application being used, that can affect the scale of what would be seen by the naked eye.

20. All photo simulations comply with the New Zealand Institute of Landscape Architects document: Visual Simulations Best Practice Guide 10.2.

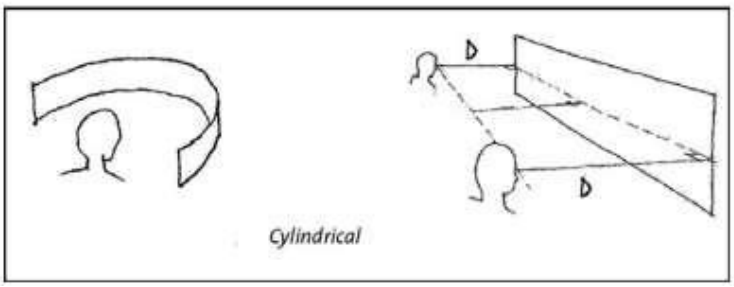

Figure 1: Viewing scale for Photo Simulations