

Thursday, 13 November 2008

## **1 SOURCE OF INFORMATION**

- 1.1 Survey data including 20m landform data, turbine design and colour, turbine locations and levels were supplied by NZ Windfarms Ltd.
- 1.2 The turbines blade direction for each photo point was set in accordance with data supplied by NZ Windfarms Ltd.
- 1.3 All the position and reference co-ordinates for the photo simulations were located by using survey data collected by TL Survey Services Ltd.
- 1.4 All photographs for the photo simulations were taken by Jason Blair. A digital 5D full frame 35mm Cannon SLR camera with a stock 50mm lens was used to take all the photographs. A 50mm lens is the current standard accepted by the Court.

## **2 METHODOLOGY**

- 2.1 To achieve a photo simulation, a 3D model is rendered into a 2 dimensional photograph.
- 2.2 MWH chose the photo point positions and Jason Blair took the relevant panoramic photos from the designated positions.
- 2.3 A surveyor from TL Survey Services Ltd then survey marked the positions of the camera and reference points.
- 2.4 We then create a series of 3D computer cameras within the simulation software. They were positioned accurately to the corresponding survey marked photo position from which the photos where taken. The camera depicts a real world camera, including matching the focal length of the 50mm lens.
- 2.5 Markers are then positioned at the reference point co-ordinates. To duplicate the view through the real world camera, we must match the reference markers and landform data to their respective physical objects in the photo, thus ensuring an

accurate horizontal and vertical alignment. The reference points may consist of existing ground features in the environment such as power poles, light stands, signs, fence posts and/or prominent trees. The reference points must be of varying heights and distance to the camera.

- 2.6 The turbine model is then imported into the scene and populated to the exact specifications including positions and elevations. A colour and texture is added to add realism.
- 2.7 A simulated real world sun was then created and positioned as per north on the survey data received. This system is suitable for shadow studies of proposed and existing structures. The Sunlight system uses light in a system that follows the geographically correct angle and movement of the sun over the earth at a given location.
- 2.8 A new image is then rendered containing the accurately positioned proposed wind turbines overtop of the original photograph within the 3D simulation software.
- 2.9 Any vegetation in the foreground was then overlaid this using photo-editing software. This was then checked against aerial photography from the site to ensure correct replacement.

### **3 CONCLUSION**

- 3.1 I consider the Photo Simulations produced to be an accurate impression of the proposed wind farm created from data provided to us.

**Emma Pollard**  
Managing Director / 3D Modeller

Level 4, BNZ Building, 137 Armagh Street  
PO Box 13-431  
Christchurch 8141  
Telephone 03 977 5330  
Fax 03 977 5331  
Mobile 021 776 768  
Email [emma@morgan-pollard.co.nz](mailto:emma@morgan-pollard.co.nz)  
[www.mpvisual.co.nz](http://www.mpvisual.co.nz)