View verification by Urbaine Pty Ltd. August 2012.

Urbaine Pty Ltd (formerly C3Di Pty Ltd) has been providing view verification services for a number of clients over the past 15 years. John Aspinall, the Principal Architect and designated Expert witness, has over 20 years' experience in generating 3D CAD modelling and is a UK Registered Architect

The company follows a standard method of verification, combining survey data, accurate 3D CAD information and site photography to produce a series of staged images, demonstrating the reasoning behind the placement of any new building development over the existing view.

The steps involved in this process are as follows:

1. Dimensioned drawing information is provided to Urbaine by the architect / developer, indicating the new development proposal. This is provided, almost always, as a series of 2D CAD drawings.
2. Urbaine imports the 2D CAD information into a proprietary 3D CAD software visualisation package, called 3D Studio Max, supported by Autodesk, the CAD software company most widely used by architects and engineers, globally. Urbaine creates a 3D CAD version of the development, located in 'global space'. This allows the 3D CAD model to be aligned with RL information from site, provided, through the client, from an appointed surveyor.
3. Prior to physical site photography, an Urbaine employee places a number of 'sight poles' at locations on the site that can be accurately defined from the survey information, in relation to their location and their RL. The sight poles are all 2m high, white aluminium poles, topped with a high visibility orb. SEE FIGURE 1.
4. The 'sight poles' are also placed into the 3D CAD model in the identical locations – the sight poles in the 3D CAD model are all identical to the physical poles.
5. Urbaine arranges photography of the site from locations specified by the client, or by the opposing parties, in any contentious development application. Photographs are taken with a professional 35mm Canon EOS 7D camera and a standard 50mm lens – representing the same view as the human eye.
6. The physical camera locations and RL information are recorded on site and subsequently plotted in the same 'global space' as the 3D CAD model of the development.
7. Views of the 3D CAD model, including the 3D site poles, are rendered (generated as 2d shaded images) from the various camera locations. The 3D sun light source is located accurately by the CAD software, by inputting data relating to location and time of day.
8. Using a proprietary piece of 2D photo-imaging software, called Photoshop, supported by Adobe, the largest global supplier of photo manipulation software, Urbaine places the 'rendered' images of the 3D CAD model over the top of the actual site photography.
9. Sight poles in the 3D CAD model render are aligned accurately over the real 2m sight poles in the actual photography. This generates an

accurate placement of the proposed development in relation to its position on the site, both horizontally and vertically. Also, since the 3D camera is generating an image from the same location as the actual camera, the superimposed image of the building will visually represent the actual scale and location of the proposed development. SEE FIGURE 2.

10. The degree of accuracy of this method relates only to the interpretation of the human eye and the resolution of the photography, in terms of the number of pixels indicating the top of 'sight poles'. If, as in the case of the Horsley Park Development, several photographs are taken to capture the full extent of the site, these are joined together in Photoshop. The target points for the physical camera (ie the centre of the photograph) are matched in the 3d rendered image and, similary the 3d images are also joined together in photoshop, prior to being overlaid onto the site photograpns. Again, accuracy is determined by the number of pixels within the crossover width of the site photogpraphy, but is relevant only in the horizontal plane.
11. Upon accurate placement of the 2d image over the photographs, Urbaine then consults with any other engaged parties, such as landscape architects and road engineers, in order to overlay further imagery to be representative of their proposed design. Again, if required, tree height poles can be placed into the 3D CAD model to assist with accuracy of tree heights, particularly when relating to the demonstration of landscaping at particular growth stages – eg 5 year growth of landscape, fully mature landscape etc. SEE FIGURE 3 & 4.

The final imagery is provided to the client as a series of high resolution digital TIFF files (a universal standard file format for 2D graphical information). The choice of delivery / printing is by the client.

Urbaine vouches for a degree of accuracy determined by the pixel resolution of the key locating points shown on the site photography. Urbaine follows all the steps, outlined above, accurately and therefore, based on the assumption that all information provided to Urbaine is truly representative of the proposed development and that site survey information is accurate, the images will be a true representation of the visual impact from the specified locations.

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PRINCIPAL ARCHITECT, URBAINE.

Figure 1: Site photography, showing 2m site / sight poles at boundary junctions

Figure 2: Proposed building development superimposed over site photography, aligning 3d CAD modelled site poles directly over the physical equivalents for accurate positioning.

Figure 3: Earth mounding superimposed over the buildings - all derived from the 3D CAD model for alignment

Figure 4: Landscaping superimposed over earth mounding to match layout from Landscape Architects

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