STANTIALLSTUDIO
Architectural Illustration - Visualisation

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Stantiall Studio Survey Verified Visual Simulations

Intention
The intention is to show in photographic form the visual effect that a proposed building or development will have on a site.
The process effectively places a digitally created building model into a photograph of the site and uses accurately surveyed site information to portray the building as if it were already built.

Process Methodology
The Verified Visual Simulation utilises survey, architectural & landscape information and involves a series of processes to ensure accuracy in the development of the visual simulation. The following steps identify the method for creating the visual simulation and the range of information required.

Survey Information
The information required includes a surveyed site plan in PDF format showing:
- The positions of any photographs to be used in the visual simulations.
- This would include GPS verified plot points for each camera position and the RL of the Camera height.
- Site markers at key points on the site – a minimum of two (i.e. Opposite corners of each building), to act as Tie-Points to match the 3D model with the photograph. GPS verified locations of these to be marked on a site plan with the RL of the markers and the height of each marker. Often used are 3m high posts with a different coloured balloon at the top of each.

Architectural Information
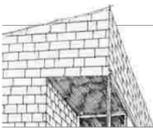The information required from the architects include:
- Plans and Elevations of each building in PDF format.
- A digital model of the building. (One will be developed if not available)
- A materials list for each building.

Landscape Information
- Planting Plan with species noted.
- Photographs of species if available.

Site Photographs
- A 50mm SLR lens closely represents the field of vision of the human eye.
- A note made of the time of day when the photographs were taken.
- Information recorded about the Camera being used, including lens info, brand and model number.
- Photographs are best taken with the camera on a level tripod in multiple overlapping shots at 24 degrees intervals.

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Model Development

Supplied digital models for each building are brought into Lightwave 3D and textured according to the supplied material list. If no model is supplied, one will be generated in Lightwave 3D using the supplied Plan and Elevation PDF files.

Virtual Camera Placement

Using the information supplied, the steps to place the 3D model into the photograph include:
- Using Lightwave 3D, the digital model is scaled 1:1 and placed into 3D space, then positioned in relation to the site plan and given a height relating to the RL on the site plan.
- Site markers are then modelled to match those in the photograph, using the height and RL information supplied by the surveyors, and placed into 3D space and positioned in relation to the site plan.
- A virtual camera is then positioned to match the actual camera plot point on the site plan and given the camera height value from the survey information.
- The photograph is brought into Lightwave 3D as a background image.
- The virtual camera is given the same pixel width and height values as the photograph.
- The virtual camera field of view is then adjusted to match the 3D model and the virtual site markers to the site markers on the photograph.

Rendering

The steps to produce a realistic image from the model include:
- Using the information supplied regarding the time of day when the photographs were taken, a virtual light source with the same azimuth and altitude of the actual sun is added.
- Adjusting the intensity and ambient colour of the light source to match the lighting conditions of the original photograph.
- A high quality image at the same resolution of the original photograph is then rendered out from Lightwave 3D.

Compositing

The steps to composite the 3D model render with the photograph include:
- Using Photoshop, the 3D model render is placed onto the original photograph.
- The render is then edited to fit into the surroundings, adding foreground elements from the original photograph and placed into their exact position in front of the 3D model, adding also any proposed elements/landscaping.
- The sharpness of the model is adjusted to match the depth of field in the photograph.
- Colours and textures of the model are adjusted to blend the model into the photograph.