

3D Model for Queen's™ Jubilee Concert Planning



A highly accurate 3D model created using state-of-the-art laser scanning technology was instrumental in the designing and planning of the Queen's™ Diamond Jubilee Concert. Millions of individual measurements were captured by land and building surveying specialists APR Services using a RIEGL laser scanner. The resulting dataset was then processed using Bentley Pointools point-cloud software to create a 3D model of the area outside Buckingham Palace, London, UK.

Tony Rogers, Managing Director of APR Services, commented that they originally captured the raw data back in April 2011, surveying the site from dawn on a Sunday morning to avoid the public. The surveying process took around 5 hours, during which time the company captured in the region of 250 million sub-centimetre accurate measurements

of the Queen Victoria Monument and its surroundings.

Malcolm Birkett, RWP's event designer, added that the model created by APR was instrumental in the planning, designing and visualising stages of the project. It allowed the designers to make decisions with regard to the stage and auditorium design without leaving the studio. The design could be visualised from an early stage, within the real-world context of the monument, and communicate the ideas with the palace, the concert TV director and other interested parties.

APR captured the sub-centimetre accurate measurements using their RIEGL VZ-400 laser scanner. The VZ-400 provides high speed, non-contact data acquisition using a narrow infrared laser beam. With an operating range of up to 600 metres, the VZ allowed the capture of the whole of the area including the the front of the Palace from outside the main gates. The point cloud data was processed using Pointools Edit to separate out and clean the statues for meshing whilst the remaining model was created in Rhino software using the Pointools Point cloud plug-in for Rhino.

The concert at the occasion of the Queen's Diamond Jubilee featured famous names from the world of rock and pop including Kylie Minogue, Cliff Richard, Stevie Wonder, Elton John and Paul McCartney and took place just outside Buckingham Palace on 4 June 2012 on a bespoke Mark Fisher-designed stage. It was watched by a live audience of 20,000 within the concert arena, with tens of thousands watching on screens along The Mall and a worldwide TV audience of millions. Managed by Robbie Williams Productions (RWP), the set-up included 1,000 square metres of decking around the Grade 1-listed Queen Victoria Monument which was surrounded by tiered seating for 12,000 and the royal box, all built over the surrounding flower beds.