

## Capturing, Representing and Visualising the 3D World

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### ABSTRACT

*Combined use of laser scanning and CAD modelling techniques to accurately capture, represent and visualise the 'real' 3D world, with all of its intricacies, is one that Cardno have proficiently mastered and remained at the forefront of technology. Although the aforementioned application remains a difficult challenge for many firms to accomplish, this presentation demonstrates the proven methods, techniques and achievements that Cardno have established in order to bring clarity, understanding and satisfaction to clients, even for the most complex projects. From simple trees to expansive railway stations, suspended bridges and major shopping centres, one objective is to highlight key projects that detail critical start-to-finish workflows for successful project completion. The use and effectiveness of static terrestrial laser scanning while comparing CAD modelling packages such as Rhino and Revit is illustrated, and how they can be combined effectively to produce interactive deliverables such as 3D pdf's and TruView photography. The power of simulated fly-throughs, walk-throughs and fly-overs is also illustrated. In summary, the approach to the 3D world is not one-size-fits-all and every job is unique in its requirements and complexity. The 3D world is always moving forward and technological advancements are constantly being introduced. Adaptation and successful implementation of these technologies is crucial for being up-to-date, whether in the hardware, software or personnel, in order to remain competitive. However, when all elements are successfully performed the results can be quite spectacular.*

**KEYWORDS:** *Laser scanning, BIM/CAD modelling, 3D visualisation.*