



Complex 3D BIM model of Chelmsford Leisure Centre

Working as part of the design team for architects Pick Everard on the £25 million Leisure Centre redevelopment, CADS completed a large-scale laser survey and complex 3D Revit® model for the project.



Survey case study by
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10/02/2017



Pick Everard collaboration

Working as part of the design team on complex refurbishment project

Surveying specialists, CADS formed part of the design team for the £25 million Riverside Ice and Leisure Centre redevelopment in Chelmsford.

Appointed by Pick Everard at the outset, CADS advised on the development of the design strategy for the project, helping to reduce risk by delivering accurate and reliable information that could be used throughout by all parties with confidence.

Working closely with Pick Everard's architects and structural engineers, CADS' surveyors established the information requirements for the project, capturing the right scale of data, and constructing the 3D Revit® model in a format that could be delivered direct to the architect's desktop within the agreed budget.

The project was to construct a new extension to the Leisure Centre over the current car park. It would contain a new 10-lane indoor pool, gym and ice rink and while removing the existing indoor and outdoor pools.

CADS' Mark Johnson comments:

"The Riverside Ice and Leisure Centre was an interesting project for us. Critically we were appointed as part of the design team and by collaborating, we were able to raise issues that often aren't considered at this early stage. This resulted in a detailed survey specification and ultimately accurate site data that the design team could rely on.

Following completion of the site survey and using the point cloud data file we constructed a LOD4 Revit® model which was delivered to the architects on their desktops so that they could commence work immediately. That data is still being used as a point of reference throughout the project."

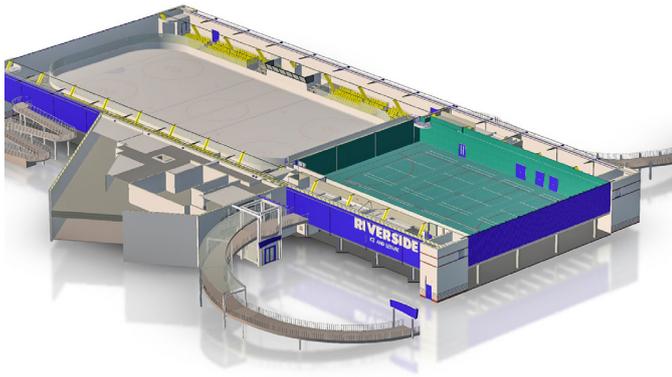


Large-scale 3D HD laser scan of ice rink and leisure centre

The project required a 3D HD laser scan of the entire ice rink and leisure centre both internally and externally.

Two hundred and forty scans were taken in total of the buildings covering 6,000 sqm and verified via a site control network that traversed through the building.

A 12,000 sqm topographic survey was also undertaken of the car park and riverside walk area, where the new building was to be constructed and the site surrounding the buildings being retained. To ensure the levels between the new and existing buildings could be perfectly aligned an existing topographic survey was used to verify levels across the site.



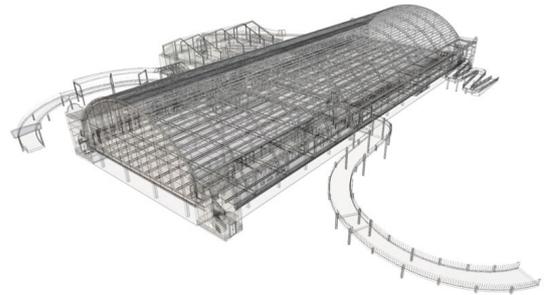
As the leisure centre was in full use from 6am to late at night, our surveyors devised and implemented a three-day programme for three surveyors that minimised disruption to the centre and its users – even on the hottest day of the year, when our surveyors were conducting the external survey.

Complex 3D Revit model delivered as a result of successful collaboration

The survey data took a week to register as a point cloud file from which the 3D Revit® model was then created. This took three weeks with up to 4 people working on the model at any one time.

The areas where the new extension will be connected to the existing building were created as a LOD 4 model accurate to within 3mm. This included detailed elements of the architectural and structural features eg ice rink and sports hall balconies and curved ramps, major elements of the plant and ductwork together with principal finishes and construction were all included.

The remaining building was modelled to a LOD3 detail showing major structural components eg windows, doors and other structural openings.



Keith Prendergast, Director, Pick Everard:

"We appointed CADS as our survey experts on the Chelmsford Leisure Centre project as we knew the team had the expertise we required in laser scanning and modelling a project of this size. We chose to involve them in the design strategy as we knew they would add valuable and professional insight."

Ready to get your project started?

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