



Combining the use of the laser scanner and total station with Tekla modelling gave us peace of mind that the steelwork would be spot-on. Designing and installing a tight-fitting maintenance platform meant there was no margin for error. It was great seeing the first bus roll into the bay—it fit perfectly.

Ben Trousdell, Project Manager/Estimator, Watkins Steel

I was on-site when Watkins scanned the depot for site measurements—it was very fast. It led to a great outcome with no site problems.

Todd Neville, Estimator, Premis Solutions

Watkins Steel was contracted by Premis Solutions to design, construct and install steelwork for a maintenance platform at the Toowong Bus Depot. The job required a mezzanine platform with handrails to be installed, enabling fleet maintenance to be performed by Council workers.



TOOWONG BUS DEPOT SUCCESS STORY

Challenges

- The Watkins team needed to design the platform to not only meet the Council's requirement to have the platform as close as possible to the bus (to make maintenance easier), but to also gain certification for Australian Standards for minimum platform width for worker safety.
- The entry to the maintenance bay where buses had to drive into was extremely tight. The Watkins team had to design the platform to fit the bus, meaning there was the added complication of having to factor the bus into the drafting plans.

Solution

- The bus was placed in situ on the maintenance lane, and the site measurement was completed by one of the team using their **Faro Focus 3D X 130 Laser Scanner**. These scans were then loaded into software to create a 'point cloud'—a 3D computer model of the site with exact measurements.
- Using the point cloud, the in-house drafting team then created detailed shop drawings of the platform and supports using **Tekla Structures 3D modelling software**. Once the shop drawings were done, the completed Tekla model was imported into the point cloud to check for any clashes, and to verify the fit of the platform to the bus in the 3D model.
- The screen shots of the model imposed on the site scan with the bus, along with the detailed shop drawings were sent to the builder, Premis, as part of their QA process. This made for prompt approval from the architect and engineer. Premis were able to use this information to provide their client with an update on job progress, showing them how the platform would work with the bus in place.
- From there, the construction drawings and model were taken to the in-house production team to handle processing and fabrication of the steelworks. The model was fed into the **Voortman V808 coping machine** that cut the beams, then line-marked and cut holes as per the plans.
- In parallel to the fabrication step, the Watkins team returned to site to do the layout for installation. Using their **Trimble RTS773 Total Station** with the completed model loaded into its software, a mark-out was done to show the hole for the anchor bolts where the steelwork was to be mounted.

Benefits



Guaranteed 100% accuracy of site measurements using the laser scanner. With the bus included in the scan, all measurements were exact and were then linked to the drawings.



Site measurement took less than an hour, saving 8. Only 1 person was needed instead of 2.



Improved plan approval timeframe to 2 days, saving 3. The sharing of the point cloud screen shots with the bus in situ helped speed up approvals.



Reduced fabrication time by nearly half using the Voortman V808 machine, processing 6.2 tonnes of steel.



Improved accuracy and reduced time by 600% of site markout, saving 10 hours. Using the Total Station was quicker and more accurate than hand markout, and was able to be done by 1 person.



Saved time on installation with no rectification required for the platform—all pieces of steelwork installed without an error.

Make your project a success with the Watkins Steel difference. Contact the Watkins team today.