# Roof Truss Case Study

JC Building Group Pty Ltd. (JC Building) were successful in a tender to build the new docklands tennis club house. The club house was a single-storey, timber and brick veneer structure. The roof was an iron roof and its design incorporated timber trusses spaced at 900mm centres.

JC Building had been in operation for several years, starting from its humbling beginnings as a small family business building 4 homes a year. It has grown to manage 8 projects per annum, including smaller scale commercial buildings (sports facilities and aged care accommodation).

JC Building employs four carpenters who act as site supervisors and uses reputable subcontractors.

Despite having a strong commitment to safety, JC Building Group had never undertaken any formal training. Their employees were highly capable and were taught on-the-job.

Luke, JC Building’s most senior site manager, was stationed at the Docklands tennis club building. Luke prides himself on developing solutions to save clients money, increase project efficiency without compromising on high standards of safety.

Most of the safety initiatives are devised on the job rather than ahead of time.

JC Projects engaged Trustworthy Trusses (TT) as their carpenters to undertake the framing and roof works. TT had previously prepared a generic SWMS which they provided to Luke for the roof truss erection. TT’s SWMS was prepared on the basis that the trusses would be spaced at no greater than 600mm centres, not the 900mm centres provided for under the Docklands tennis clubhouse design specifications.

Work commenced on the roof truss installation. WorkSafe Victoria were right in the middle of their proactive enforcement campaign on the construction chapter of the OHS regulations, which includes a focus on SWMS. Their Inspectors Tony and Alan visited the Docklands tennis club building project.

The inspectors observed work being undertaken at height where there was a risk of falling more than two metres. Upon reviewing TT’s SWMS, the inspectors formed the view that the high risk construction work was not being undertaken in accordance with the SWMS. Work was stopped.

An improvement notice was issued to TT for a failure to provide a system of work which was safe for its employees. An improvement notice was also issued to JC Building for its failure to properly exercise its management and control of the workplace. These notices went along with directions that the work was not to resume until an appropriate system of work was devised to further reduce the risk of working at heights.

Luke, in consultation with TT’s employees referred to guidance by WorkSafe, which steps out part of the state of knowledge in how to erect roof trusses safely. It became apparent that because the roof trusses were spaced at greater than 600mm centres, intermediate roof batons had to be installed at 450mm centres. This reduced the size of the void that workers could possible fall through.

It took a significant amount of time to install the roof batons and there were significant additional costs incurred due to the need for additional timber. Furthermore, TT issued JC Building Group with a cost variation for the additional labour required.

What did Luke, TT and JC Building learn from this event?

1. Had JC reviewed the design through an OHS lens, before the project commenced, they could have altered the design of the roof and truss spacing. A redesigned roof truss system, where the spacing would have not exceeded 600mm centres would only have required an additional two roof trusses. This would have been significantly cheaper, quicker and safer.
2. SWMS must be site specific. Luke did not review TT’s documented system of work ahead of time.
3. A reactive approach to safety is costly. It was lucky in this case that WorkSafe arrived when they did, before anyone was seriously hurt.
4. Duty holders must work together, in coordination, to achieve the best safety outcomes. Formal consultation between the principle contractor, the subcontractors and their employees is crucial to identifying hazards proactively and ensuring the appropriate risk controls are implemented.