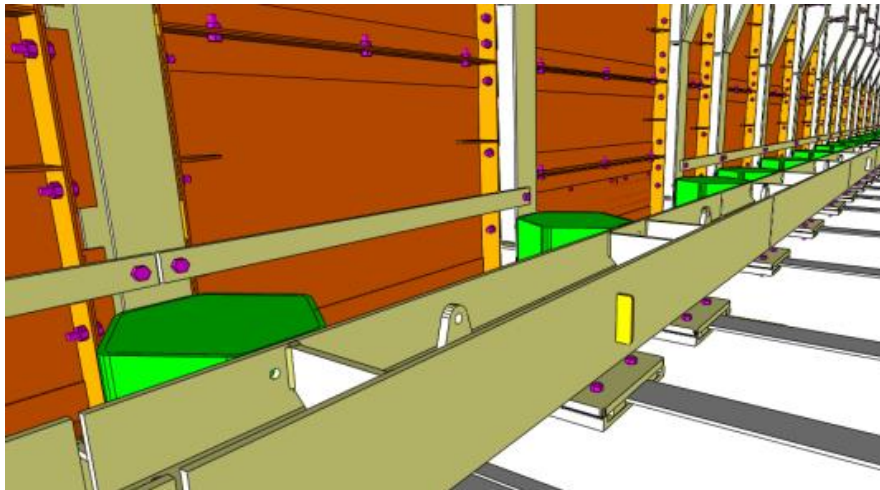


The Problem

Our client was keen to bring an acquired legacy platform up to the highest standards of fire safety as seen in the North Sea.



Process

A number of safety recommendations were made, but the most difficult to implement was a firewall that was needed across the process deck. The platform could mount a large drilling and accommodation module when required, and this module leaves little spare strength capacity in the structure. A blastwall is only effective if the load it absorbs can be safely transmitted to the supporting structure.

Furthermore, the location of the blastwall did not align with major supporting beams. An innovative solution was required, and we developed a design that saw the wall mounted along specially shaped collapsible supports that both filled the space between the wall and the support beam, but also damped the shock loads on the main structure.

The design of the supports and the wall was perfected using advanced finite element methods. We used the same techniques to optimise the shapes and weights of the components so they could be safely fitted on the platform by a small local labour force without loss of production. By close collaboration with the fabricator in Houston, a complete set of parts including an onshore installation trainer and a dismountable offshore winch was provided to the team. The entire installation was made in a matter of a few weeks with very few design queries and no lost-time incidents.

Outcome

We accurately diagnosed the problem and devised an innovative and pragmatic solution.