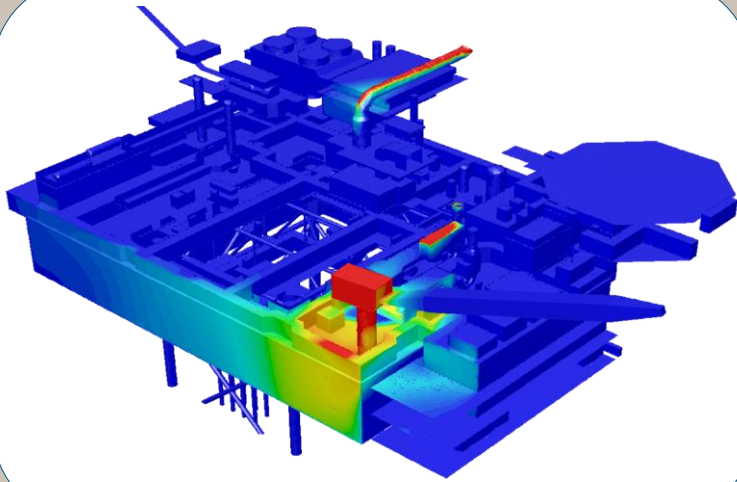


Structural Consequence Modelling Support for Risk Engineers in the Process Industry



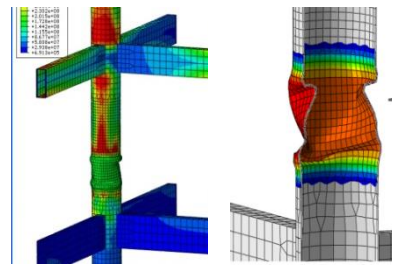
BMT WBM has over 30 years of experience delivering high quality engineering and design solutions.

Our philosophy is to develop and apply scientifically based methods to solve industrial problems. Through this philosophy significant contributions have been made to improve safety in industry, as well as to contribute to substantial economic savings through the use of advanced and accurate methods for design.

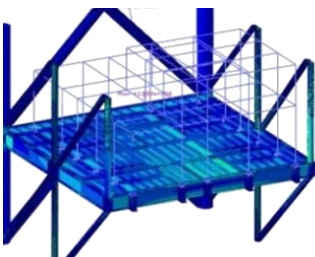
Engineering Analysis Expertise

BMT WBM provides critical structural response FEA analysis for fire scenarios and blast consequences. Comprehensive elastic-plastic and collapse analysis is modelled using advanced FEM software to assess “what-if” scenarios.

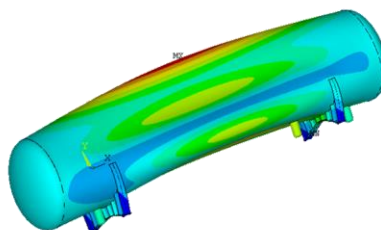
Our primary areas of practice include complex structural and fluid dynamic analysis, consulting and support for structural and mechanical engineers, environmental engineers, onshore and offshore safety engineers.



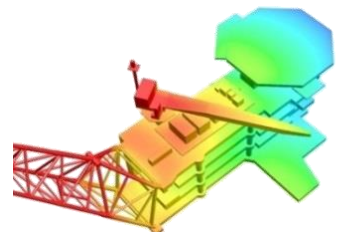
Column collapse due to jet fire



**Explosion consequence
on deck structures**

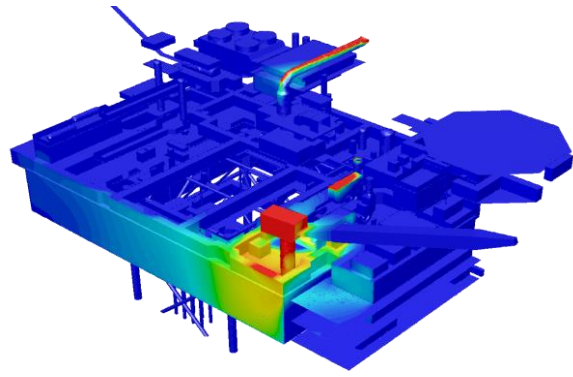


**Fire impact on
pressure vessels**



Flare radiation incidents

Structural Consequence Modelling Support for Risk Engineers in the Process Industry



Offshore facilities may be subject to severe thermal and blast loads in the event of a fire or explosion. These loads may be high enough to cause serious structural damage to load bearing members, ultimately leading to the collapse of a platform. Furthermore, the impact on pressurised vessels may be catastrophic, leading to large loss of containment events and further damage through escalation. Accordingly, it is important to assess the ability of a facility to withstand these loads. CFD may be used to predict the heat loads, thermal fluxes, drag loads or explosion overpressures resulting from fires or explosions, and this data may then be utilised in a structural analysis using FEA to predict the response of a given structure when exposed to these conditions. Some examples are:

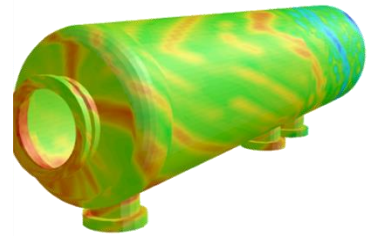
Blast Impact Analysis

Simulating the structural response and/or failure due to an explosion involves fluid-structure interaction modelling of highly non-linear dynamics. The effect of high pressure shock waves with short-duration impulses is analysed in great detail, allowing customized explosion impact analysis to achieve safer and practical designs.

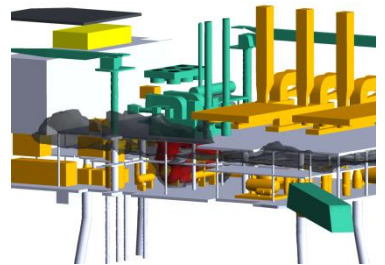
Fire Impact Analysis

BMT provides fire load response assessments for the safety critical elements including pressurized vessels, flare drums and piping. These elements when exposed to high thermal loads may result in severe damage, loss of containment and produce further escalation. Predicting the dynamic response when exposed to severe thermal loads is a challenging exercise, and specialist software is used to tackle such problems taking into account the emergency response philosophy of the system (i.e. isolation, blowdown).

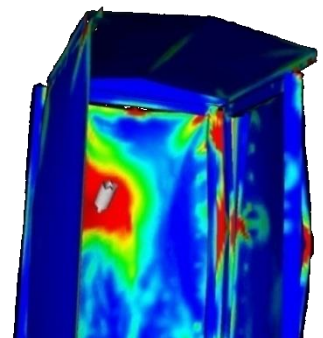
For further information please contact:
Email: AdvancedAnalysis@bmtwbm.com.au



Flare drum and header jet fire impact analysis



Medium jet fire on the cellar deck



Blast fragment impacting studies