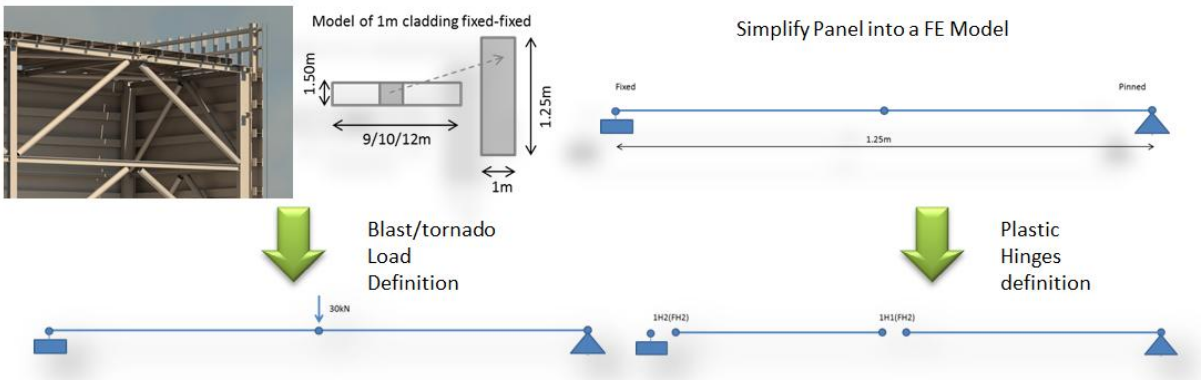
Innovative Design of Cladding System

Buildings that are required to resist extreme loads for example impact and blast loads have been constructed traditionally with thick reinforced concrete wall sections. This type of construction is relatively long and with associated high cost per m^2.

Mott MacDonald has developed a structural cladding system to replace the thick reinforced concrete wall section for a lightweight structure. The new system absorbs the energy associated with the impact and blast loadsusing the non-linear behaviour of the steel sections. The structural cladding system is formed by a steel plates spanning between UCcladding rails and supported by the mainframe steelwork columns.



Sketch of design techniques used for the cladding system

The braced frame system provides a lightweight structure, reducing the building footprint and construction programme which resulted in cost savings. The design methodology developed can be tailored to suit different requirements allowing for a broad range of application for any type of extreme load.

Benefits:

The benefits of using this new cladding system in comparison with previous concrete structure:

- Reduction of building footprint and construction times with consequently cost savings
- CO2 emission savings
- Wide range of applications
- Highly resilient building
- Lightweight structure

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