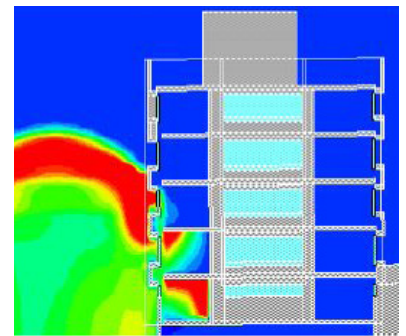


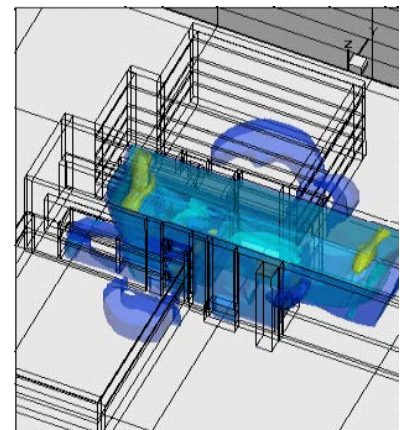
MMI has specialised experience in the full spectrum of security engineering services. Our capabilities include threat assessment, vulnerability analysis, and mitigation and design.

Protection against terrorism remains one of the most significant challenges faced by the security and engineering communities. MMI has expertise in structural engineering, Computational Fluid Dynamics (CFD), fire engineering, explosions modelling and extreme load effects - providing a comprehensive set of services related to security engineering. Our specialised capabilities include:

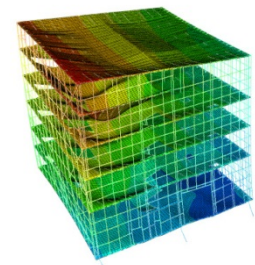
- **Threat Definition:** MMI has an acute understanding of Improved Explosive Devices (IEDs) and Vehicle Borne IED's (VBIED's) using military grade (i.e. RDX), homemade (i.e. ANFO), or fuel-air devices (such as the failed New York Times bombing on May 1, 2010). Our engineers use their understanding of delivery mechanisms and experience with past attacks to define the possible size and location of the explosive device based on the facility of interest
- **Definition of Blast Loading:** We use sophisticated CFD modelling to quantify blast pressures and the effects of blasts on structures. We use special tools, such as ANSYS CFX, CEBAM and LS-DYNA to model blast and missile effects on structures
- **Access Control Points (ACP) Layout and Design:** Using parameters such as road layouts and barriers, MMI has worked with airports, military bases and nuclear and petrochemical facilities to develop perimeter security measures
- **Sensitive Compartmented Information Facilities (SCIF) Design:** We combine our expertise in structural analysis and vulnerability assessments of internal IT, HVAC and control systems to provide SCIF design services. We have provided such services to a rail network signalling and control centre in the UK, a bank data centre in Malaysia and the Turkey Point nuclear facility in Florida
- **Chemical, Biological and Radiological (CBR) Protection:** Our engineers use their expertise in gas dispersion modelling under free and forced ventilation conditions, to assess the threat of release and dispersion of hazardous substances in buildings and large population centres
- **Blast Resistant Design and Analysis:** MMI uses tools ranging from simplified single degree of freedom system response to comprehensive nonlinear analyses, using ANSYS, ABAQUS and LS-DYNA, to assess structural response to blast loading



Recreation of Kenya Bombing



Blast loading from van size device inside a nuclear facility



Structural analysis of building subjected to blast loading