

MCD Fire Engineering Capability Statement

MCD Fire Engineering is a leading fire safety engineering consultancy. We provide international and local expertise in fire safety, performance solutions and expert witnessing throughout Australia.

We provide consultancy excellence in the scientific application of fire safety for life and property protection, business continuity and preservation of the environment.

We have an intimate approach to client specific projects, industry alliances, research and development, working closely with you to create a functional, flexible and cost-effective fire safety design solution, regardless of the complexity, size or scope of the project.

We deliver innovative solutions throughout all stages of the design and construction process, with a commitment to ensuring best outcomes are achieved for every project.

MCD Fire Engineering are Accredited Fire Safety Engineers in New South Wales, Australian Capital Territory, Queensland and Victoria. Our Managing Director also holds National Engineering Registration (NER) with Engineers Australia as a Chartered Professional Engineer. Our fire engineering experience covers all building types and classifications, sizes and ages, both in Europe and Australia using International Building Codes from Australia, New Zealand, Europe and North America.

We provide qualified and accredited fire engineering consultancy services to all building sectors - airports, shopping complexes, low and high rise residential, commercial, educational facilities, industrial, health and aged care, public sector projects and places of public assembly. We specialise in the integration of fire safety designs and strategies in heritage buildings recognising the sensitive balance between fire safety and heritage integrity.

MCD Fire Engineering believe in ongoing research and development and best industry practice. We pride ourselves on our professional approach to each specific project as well as maintaining an efficiency in delivering high-quality fire engineering design.

MCD Fire Engineering Services

Our highly skilled and dedicated team of engineers offer fire engineering and performance solutions, providing assurance that the building will comply with current legislation, codes and regulations and meet client driven objectives.

Pre-DA/DA Stage-Concept Fire Engineering Strategy (CFES)

Our Concept Fire Engineering Strategy/Design Development Notes are visual, high-level advice on the significant parts of the early-stage design relative to fire engineering strategy that provide clear precise key parameters to our proposed solutions. Informing the design team (and Council) this allows fire engineering concepts to be incorporated in the design from the outset, saving significant time and cost. During the DA stage, MCD can liaise with the design team and BCA consultant to determine strategies for existing non-compliances and fire safety design that satisfies the BCA but also the client goals.

Complying Development Certificate (CDC)

NSW Legislation allows certain works to be facilitate via a CDC process, where owners/clients do not require consent from a Council. This will however still require certification by a PCA.

MCD Fire Engineering can work with the PCA and design team as early as possible to ensure that these works, considered to be low risk and low impact projects, meet the BCA requirements in a timely and cost-effective manner simplifying the process and reducing costs for clients and building owners.





MCD Fire Engineering Services *(continued)*

Fire Engineering Brief Questionnaire (FEBQ)

MCD Fire can develop a fire safety design strategy to address expected non-compliances as well as a preliminary list of essential fire safety measures in a trial fire design to justify relevant BCA non-compliances.

We conduct preliminary discussions with the design team to develop an understanding of the project and if required, undertake a detailed review of the current design to determine potential issues. We set out, discuss and agree in principle the design methodologies to be adopted with the relevant stakeholders including the client and PCA prior to developing a full Performance Solution Report.

Fire Engineering Performance Based Design Brief (PBDB)

Once the FEBQ has been lodged and FRNSW notify the applicant or MCD Fire Engineering that comments will NOT be provided, then a Performance Based Design Brief will be required. This must be completed prior to the development of the Fire Engineering Performance Solution Report (PSR) for the purposes of certification.

The PBDB sets the scope of work for the performance-based analysis, the technical basis for analysis and the criteria for acceptance of any relevant Performance Solution as agreed between relevant stakeholders.

Construction Certificate Stage (CC)

During the CC stage, MCD Fire can work with the Design Team and PCA to provide early advice and scope of services on the documentation required to ensure the smooth progression from CC through to Occupation Certificate (OC) stage. This may involve a combination of fire services depending on the extent of non-compliances.



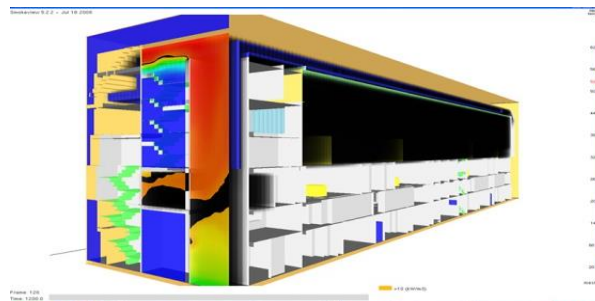
Fire Engineering Performance Solution Report (PSR)

The Fire Engineering Performance Solution Report (PSR) takes the intent and agreed concept of the FEBQ/PBDB to a more detailed and documented design. MCD Fire Engineering sets out to achieve formal approval of the fire safety strategy by all relevant stakeholders including the PCA. We actively develop a detailed analysis and validate non-compliances being address and highlighted during the FEBQ/PBDB stage.

MCD manage this entire process, finalising the PSR for submission to the PCA and/or the Fire Brigade for approval under the EP&A Regulation 2000 for application for a Construction Certificate/Occupation Certificate.

Fire & Smoke CFD Modelling

Fire & Smoke Modelling Analysis (Computational Fluid Dynamics) is often required to assess more complex fire safety scenarios to determine the impact on occupant and fire service safety, such as large buildings with atria, warehouses / storage facilities and other buildings with large open spaces. MCD has extensive experience in building and developing fire safety designs using CFD analysis, from smaller residential corridors, buildings containing atria, large open areas such as retail areas, warehousing and industrial buildings as well as carparks using impulse ventilation systems such as jet fans.



Occupation Certificate Stage (OC)

As part of the construction process, we can provide the following fire engineering services;

- Interim site inspections during construction to check progress against the Performance Solution Report.
- Resolve new fire engineering issues which may arise during construction phase.
- Develop fire safety strategies to maintain emergency access and egress routes.
- Witness interface testing of fire services.
- Issue defects report.
- Review relevant construction/test certificates.
- Issue Letter of Compliance satisfying Clause 152B of the EP&A Regulation to permit the issue of an Occupation Certificate.

Fire Safety Audits & Inspections

MCD Fire Engineering has extensive experience on sites ranging from small upgrades to existing buildings of less than \$100,000 to major developments over \$1 billion.

Our early involvement into the design on existing building is crucial and achieves significant cost savings in proposed works. As part of this service, we may advise that a review of the existing fire and life safety services be carried out to determine the level to which the building conforms, e.g. Ordinance 70 and whether any modifications were carried out since the original installations. During the audit stage, we may advise that such services be retained, maintained or upgraded and as such, investigation into the compounding effects are known from the beginning stages. We can provide some initial advise on how much or how far these upgrades are required to go with respect to current Standards and whether some or all of them can be addressed via a fire engineering upgrade strategy.

Fire Safety Orders and Voluntary Upgrades

Where building owners, strata or body corporates are aware of fire safety deficiencies or in receipt of a Fire Order or Notice of Intention to serve an Order, it is important to obtain fire safety upgrade advice as early in the design as possible.

MCD Fire Engineering may advise, even at an early stage that a review of the existing fire and life safety services is carried out to determine what level the current building conforms. We will provide initial advice on how to address each item in turn, and whether partial or full compliance with the order is necessary, or whether some items may be addressed by way of an Alternative Solution. This informs Council, and if desired, the Fire Brigade, that the fire engineering strategy can be incorporated into the building and the concerns raised in the Order can be addressed.

Insurance Coverage

MCD Fire Engineering maintains complete insurance cover for all fire engineering and expert witness services they offer;

Insurance	Insurer	Policy Number
Professional Indemnity	Liberty Mutual Insurance Company	MI-SYSPC-01-161312-PI
Public Liability	Berkley Insurance Australia	202106-1304 BIA
Workers Compensation	iCare	112552001

Contact Details

If you require assistance with Fire Safety Engineering services, please do not hesitate to contact us;

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W www.mcdfire.com.au

Impulse/Jet Fans in Underground Car Parking

Traditional car park mechanical ventilation systems can take up extensive space and require further excavation to maintain clearances within carparks. However, Impulse / Jet fans, whilst providing the same level of performance can reduce each of these components significantly and bring significant cost savings to projects.

MCD Fire Engineering brings international expertise to the design and installation of these systems, with documentation, test data and project experience to assist not only regulators here, but also mechanical engineers and end users in how these systems work. Putting aside the question of efficiencies of either the traditional or IV systems, the possible benefits, from the designer's point of view, are that:

- There is less energy consumption due to the reduced supply and exhaust fan sizes;
- Reduced slab to slab height;
- Reduced installation costs.

Combustible Cladding / Expert Witness

MCD Fire Engineering brings international expertise to the design and risk assessment of Combustible Cladding and its retention / remediation.

In addition, MCD Fire Engineering provide Expert Witness work in the area of Cladding as well as all other aspects of fire and life safety.

Fire Engineering Peer Reviews

A peer review is a third-party peer review of the fire engineering assessment prepared to ensure that the proposed fire engineering report generally conforms to the requirements of the International/Australian Fire Engineering Guidelines (IFEG 2005 / AFEG 2021) and more specifically that the assumptions, methodology and input parameters of the principle fire safety engineering documentation are appropriate to the design and meets the stated performance requirements of the BCA.

MCD Fire Engineering Project Examples

Aged Care

Scalabrini Villages
The Grove, Randwick
Twilight Aged Care
Uniting Aged Care

Assembly & Recreational

Cronulla RSL
Cronulla Sharks Rugby League Football Club
Emmanuel Synagogue
Frensham Aquatic Centre

Commercial

Darling Park Tower 2 and 3
Department of Defence (Ireland), HQ
Montevetro (Google HQ Ireland)
Office of Public Works (Ireland), HQ
Village Road Show HQ (Sydney)
1 Shelley St, Sydney
1 Smith St, Paramatta (Sydney Water Re-Cladding)
1 Margaret St
2 Chifley Square, Sydney
201 Elizabeth St, Sydney (Tower Refurbishment)
231 Elizabeth St, Sydney (Tower Refurbishment)
465 Victoria Rd
601 Pacific Highway
Woollooware Bay Town Centre (Stage 4)
Oran Park Town Centre (Re-Cladding)

Educational

North Sydney Public Schools

- Cammeray Public School
- Canada Bay Public School
- Mowbray Public School

SCEGGS Darlinghurst
Schools Infrastructure NSW Projects;

- Catherine Fields Public School
- East Leppington (Denham Court) Public School
- Edmondson Park Primary School
- Murrumbateman Public School
- Googong Public School

Scots College (multiple)
St Luke's Grammar School
St Patrick's College
St Luke's College
St. Ives, Prep School
St. Catherine's, Waverly

Health Care

Prince of Wales Hospital
St Vincent's Private Hospital
Westmead Hospital Re-development

Heritage

Downing Centre
Opera Bar & Café
State Library NSW
The Bushells Building, The Rocks

Industrial & Warehousing

Ausgrid Substations (Re-Cladding)
Coca Cola Campuses (Ireland)
Dell Computers EMF 1 & 3 (Ireland)
Rheem Australia
Interface Carpets
Booktopia
Turlough Hill Power Station (Ireland)

Residential

Highpoint Development, Hurstville
TOGA Hotel/Apartments (multiple)
Wentworth Point Marinas (multiple)
100's Class 2 Residential Buildings, Sydney
>\$1Billion Rockbrook Development (Ireland)

Retail

Dundrum Town Centre (Ireland)
MarketPlace Leichardt Upgrade
Warriewood Grove
Westfield Warringah Mall
Woolworths

Student Accommodation

WeeHur (QLD)
IGLU Redfern (QLD)
38 Wharf St (QLD)
363 Adelaide St (QLD)

Further details on each of these projects can
be found on our website;

www.mcdfire.com.au