



STAMFORD PLAZA | AUCKLAND



AUCKLAND MUSEUM GRAND ATRIUM



21 QUEEN STREET | AUCKLAND



APPARTAMENTO IL CASINO | WELLINGTON

STEEL FRAMED STRUCTURES AND FIRE

The structural elements of a building are required to withstand fire in order to prevent collapse, the spread of fire to neighbouring properties and to allow the Fire Service time to carry out fire fighting operations.

Under prescriptive fire regulations, most primary structural elements require passive fire protection. Applying such protection is costly and time consuming, and in a multi-storey building, the cost can run into hundreds of thousands of dollars. Unfortunately, most structural elements with applied passive fire protection still need to be replaced after a fire incident, so the application of the redundant fire protection is of little benefit to the owner or the structure. Even the installation of a sprinkler system, although reducing the likelihood of catastrophic fires, cannot guarantee that structural elements meet performance requirements.

Performance based fire engineering design can be used to reduce - and sometimes eliminate - the need for passive fire protection. This design approach considers the actual fire and loading conditions and determines the additional passive fire protection specifically for each structural element with consideration of the inherent fire resistance of the member. Therefore no waste of materials and time occurs through unnecessary fire protection. Steel structures incorporating performance based structural fire design have significantly less capital and life cycle costs, fewer subcontractors on site, a shorter construction period and are more environmentally friendly.

Holmes Fire has more than ten years experience in performance based structural fire design and is the only company providing this level of service in New Zealand. All of our engineers have post-graduate qualifications in either structural engineering or fire engineering. With this expertise, we can deliver value through a collaborative and defensible process involving the client, architects, contractors, New Zealand Fire Service and Territorial Authorities.

Recent project examples:

Stamford Plaza, Auckland - high-rise apartment building; structural steel remained completely unprotected.

Auckland Museum Grand Atrium - public building; structural steel remained completely unprotected.

21 Queen Street, Auckland - office building; all but major floor beams remained unprotected.

Appartamento Il Casino, Wellington - apartment building; most of the structural steel elements did not require further passive fire protection.

