



Project Data Sheet

RETAIL

Environmental | ESD | Air | Power | Noise | Structure

Project: Penrith Plaza Shopping Centre

Project Description

This project comprises a basement car park with two levels of retail above. The shopping centre expansion includes for typical tenancies fronting on to an open street. In addition, the centre includes for mini major stores, food courts, loading dock, food tenancies, amenities etc.

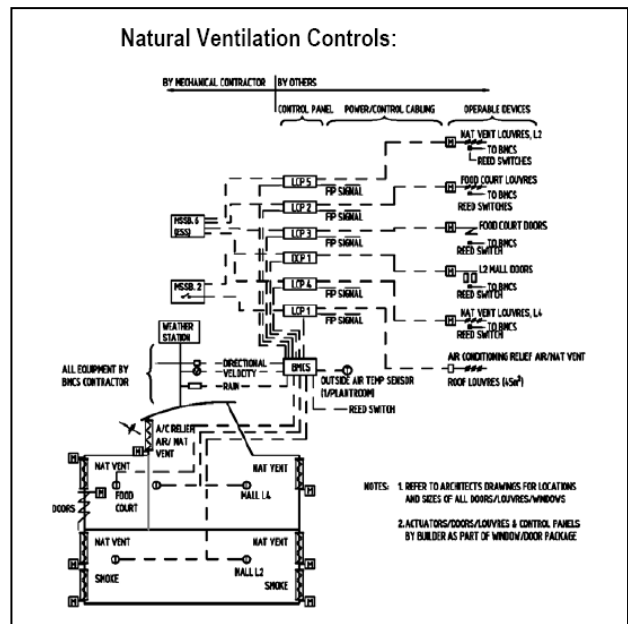


Scope of Services

KAE undertook the mechanical service design for this major shopping centre expansion. Mechanical value approx \$6.0M.

The main project design requirement was for a low energy consuming centre. The design allows for the following energy saving initiatives:

- Efficient central plant systems (<700pa)
- Variable volume primary only chilled water circuit
- CO detection within the car park to control fan speed in this area
- CO2 detection within centre air handling plant to control fan speed
- Free cooling via façade openings and mixed mode operation
- Economy cycle controls
- Fabric selection and performance
- Low resistance system design



Highlights & Deliverables

The centre is atop a 362 car underground car park. KAE undertook CFD analysis to enable an 'Engineered Design Solution' deleting significant riser and ductwork requirements. The design allows for a virtually ductwork free car park.