

# ENGINEERING AN ARENA FOR THE FIGHT AGAINST CANCER



**K**nox Advanced Engineering (KAE) had to meet the requirements of some of Australia's most stringent legislation in their work on the Lowy Cancer Research Facility at the UNSW. They were contracted to design the mechanical systems, air-conditioning, specialist exhaust systems, ESD analysis, energy analysis, fume cupboards and cool rooms in addition to PC2 laboratory systems and PC2 animal housing.

KAE's designs for the project included PC2 class laboratory air conditioning and ventilation systems, co generation with absorption chiller study, ESD and natural ventilation, BMCS for all services and varied ventilation for specialist areas.

All of this work was carried out within a design framework which aimed for a 4.5 Education Green Star rating, included floor by floor independent plant systems, and required reliable pressure and temperature controlled internal environments for highly sensitive research.

"KAE specialises in the provision of Health Care designs, and has drawn on its experience from other health care projects and deep understanding of relevant Australian standards and OGTR (Office of the Gene Technology Regulator) requirements to provide the design for this project. The design is flexible and robust and concentrates on allowing staff to perform their research in ideal conditions," explained Designer and KAE Director Jorgen Knox. "KAE has utilised computerised calculations on all aspects of our design including building modelling for natural ventilation, energy usage and air quality calculations. Project

highlights included working as a team to create this important facility, solving technical challenges created from specialist research area requirements, provision of a step by step commissioning procedures manual for the project; and provision of critical services in a space confined building."

Other challenges in the project included extreme building pressure and flow control, and the intrinsically complex nature of OGTR and PC2 compliant Cancer Research laboratories.

KAE are staffed by a multidisciplinary team of 24, and have been in the business of creating advanced building services designs since 1999. Their talents extend beyond medical and scientific developments into all building sectors including commercial and retail, as evidenced by their other current projects including Sussex Hay, Darling Park Tower 1, and Stocklands The Pines Shopping Centre in Melbourne.

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