

# RAAF Richmond Squadron 36 and 37 HQ

## Sydney, Australia



### Project

RAAF Richmond Squadron 36 and 37 HQ

### Client

Department of Defence

### Assignment

ESD Consultants and Green Star Accredited Professionals



### Project Overview

The SQNHQ is a lighthouse example of sustainable design for the Department of Defence. The project is a two-storey, 4,000m<sup>2</sup> office building that had to respond to several stringent, Defence-specific, social and physical constraints, which in past projects have been seen as incompatible with sustainability principles. Physical security requirements traditionally necessitate the 'closing-up' of the building, however with lateral thinking and willingness to challenge the norm, this building resolved these requirements with the sustainability vision to create a new paradigm for Defence facilities.

The LLd Sustainability Unit were engaged by the Department to undertake an ESD peer review of the design, and provide ESD and Green Star advice to the project team from design through to construction. We were responsible for preparing the Green Star submissions and achieving both 5 Green Star Office Design and 5 Green Star Office As-Built ratings for the project. The LLd SU are now managing the process for the building to achieve a 5 Star Green Star Office Interiors (Fit Out) rating.

Traditionally a building with this type of security would be a large enclosed box that would be entirely serviced by air-handling equipment. The technical challenges were to meet the operational requirements (including security) but make the building sustainable. This was achieved by the building with the following key ESD initiatives:

- Daylighting and External views. After examining the existing process maps and with some changes only a small portion of the building needed to be 'closed-up' resulting in increased indoor environment quality for the building occupants through daylighting and accessible views to the outdoors.
- Ventilation: Thermal culverts under the ground slab, BMS controlled air intake louvres, hollow core slabs and the fly roof allow the building to be naturally ventilated for a portion of the year. This ventilation strategy is unique for Defence for this type of building given its security requirements.

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- Waterless urinals are used in this project. This is fairly unique for this type of building. Furthermore, credits were not achieved for this technology as the maximum credits were achieved for the credit (Wat-1) as a result of the rainwater reuse system. This initiative alone reduces water consumption by approximately 100kL per annum compared to installing an AAA rated urinal.
- HDPE, vitreous clay and reinforced concrete pipes were used in preference to polyvinyl chloride products.
- Electrical cabling was replaced with non-PVC alternatives that are less environmentally harmful.
- Likely technological developments were considered and the building design proofed against this to avoid future refurbishments.
- As a result of this project (and with validation on another project for cost-benefit analysis) the sewage system was retained which avoided additional infrastructure elsewhere and eliminated any flows to municipal sewerage systems.
- Materials: There were no FSC certified sustainable timber plantations found in Australia. Beside transportation costs this conflicts with the Buy Australian policy. Exceptions to these policies were made to ensure this project met the Green Star requirements.

The building is the first to achieve a Green Star rating in NSW, the first for a Defence building, and the first for a Commonwealth Government building. It is also the first and only building in Australia to achieve 5 Green Star ratings under both the Office Design and Office As-Built rating tools.

With the success of the SQNHQ Building, Defence are changing their policies on Green Buildings, and adopting the process and a number of initiatives implemented on this project. The Department's vision is that through ESD policy reform, this building will help improve the environmental performance of their entire portfolio, representing more than \$300 million in annual facilities expenditure. SQNHQ will also demonstrate leadership to other government agencies and the private sector, act as a catalyst for industry acceptance of green buildings, and thus make a significant contribution to the ESD market.