AIRA
By SEELEY INTERNATIONAL

Case study

Southbank Grand Apartments

Southbank, Melbourne

Upgrade leads to increased energy efficiency and an enhanced green star rating

Project Address: 151 City Road Southbank, Victoria

Consultant: ALA Consulting

Senior Mechanical Engineer: Andrew Lingard

The recent development of Southbank Grand, an apartment building in Melbourne's Southbank, created a need for an energy efficient open air ventilation system for the large lobby and its residents. AIRA was able to deliver a bespoke lobby ventilation and pressurisation system to meet those needs.

Project requirements

- A cost and energy efficient solution for the lobby and open area ventilation system
- A smaller footprint compared to a traditional air conditioning plant
- To achieve a higher green star rating for the development

Solution

With these key requirements in mind, the solution offered was an AIRA IDC unit to provide lobby heating, cooling and ventilation.

The standard refrigerated load for this project was 160kW, however by precooling the outside air the equipment capacity was reduced to 85kW. This reduction led to a smaller plant size, reduction in the electricty costs and reduced power consumption.

Since project completion, the system is working exactly as intended, meeting the design requirements of the consulting engineer. The unit runs 75% of the time solely in evaporative cooling mode, which reduces running costs dramatically due to fans and pumps running and not refridgerated air conditioning.

Southbank Grand has also been successful in obtaining an enhanced green star rating, contributed to by AIRA IDC technology.

aira.com.au

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sydney design awards

Half a Century of Exporting Excellence 2017 Business Victoria Export Awards WINNER

The Australian Business Awards ABAQCO NEW PRODUCT INNOVATION WINNER 2017

55th Australian Export Awards 2017 NATIONAL FINALIST

melbourne design awards

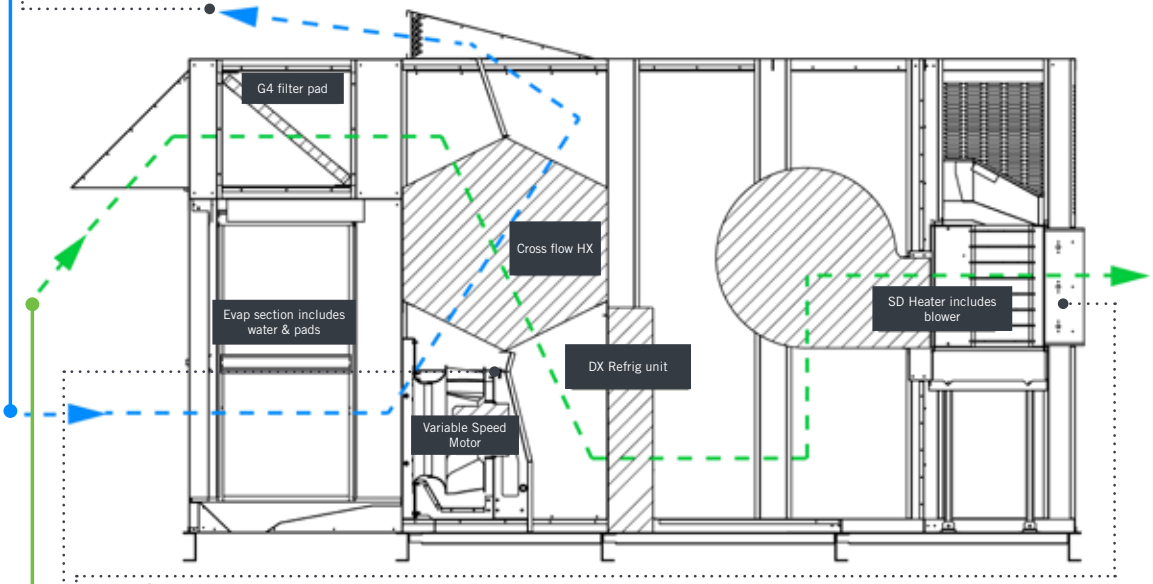
GOOD DESIGN Award

How IDC Works

An indirect cooling component provides cool air via evaporation without increasing the humidity of the supply air flowing into the building.

Basic operation of this unit involves two airstreams into system.

- **Airstream one** enters via the evaporative cooler which precools the air by up to 21°C – depending on relative humidity
- This airstream then passes over an enthalpy exchanger in section two of the unit then vents to the atmosphere



- **Airstream two** enters through filters and the enthalpy exchanger, picking up the sensible cooling load from airstream one
- This air then passes over the refrigerated coil which is activated if additional cooling is required, then across the heat exchanger (heating section) which provides heating when required
- Air is then supplied into the building as a tempered supply air stream

"You can count on AIRA to provide the support, technical information and quality products a mechanical/ design engineer needs. I've used AIRA on a number of projects and have never had any failures come back. They give me confidence that performance will be what was specified and with their involvement, it's one less concern for the project delivery." - Wayne Smith, Mechanical and Design Engineer, Southbank Apartments

The Advantages

- The dry air evaporative precooling system provides a reduction of up to 12 degrees without adding moisture to the incoming outside air
- Incoming outside air is filtered
- The refrigerated coil is greatly reduced in capacity
- The system is flexible allowing ambient air in mild conditions
- Power load and consumption is reduced
- Cheaper than a large refrigerated system to supply and fit

The outside air AIRA IDC units come in the following standard sizes, IDC 26, 35, 40 and 60. Modular combinations of the standard units can be made to create an IDC 70, 80 or 100. Thus creating many options available with airflows varying from 1,200 to 11,000 L/s.

In recent years Seeley International has installed many AIRA IDC systems in Melbourne apartment buildings including Abode Apartments, The Void, The Atrium, Australia 108 and Melbourne One.

AIRA By SEELEY INTERNATIONAL

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