



GREEN SQUARE APARTMENTS

BACKGROUND

Offering premium riverside living just a few kilometres from Melbourne's CBD, Green Square is a \$250 million residential apartment development in Victoria Street Abbotsford.

Developed by Salta Properties on a former Metropolitan Fire Brigade site, the first stage features over 400 luxury apartments across four buildings as well as a further 93 serviced apartments managed by Quest.

Designed around a dynamic outdoor recreational hub, Green Square offers residents a host of on-site amenities including indoor/outdoor swimming pool, gymnasium, library, basement car parking and rooftop entertainment zone.

And it's unique position on Victoria Street also provides direct access to the Yarra River, parks and bushland of nearby Studley and Yarra Bend parks, as well as being within close walking distance to Richmond's vibrant shops, cafes and restaurants.

THE CHALLENGE

Salta Properties engaged Icon Construction as head contractor on the first stage of the Green Square project, and appointed multidisciplinary firm SJB Architects as architect and interior designer. SJB took an innovative approach to the project to successfully integrate higher density living into one of Melbourne's traditionally low-rise suburbs.

Each building has been designed with its own individual lobby access, gathered around the large central green square, while the apartments feature views across the Yarra, to the city or across the adjoining suburb of Richmond.

A ground floor retail frontage to Victoria Street was also created, as were two distinct street frontages to the apartment buildings.

Consulting engineer Simpson Kotzman was appointed to the project, while local HVAC contractor Rival Air was engaged by Icon Construction to provide a quality,

air conditioning and mechanical services solution. Construction commenced on the site in the last quarter of 2012.

According to Rival Air's Managing Director Andrew Stewart, the project brief demanded a quality air conditioning and heating solution that matched the high end finish of the apartments. This required Rival Air to rework original concept drawings to ensure outdoor condensers were located away from the apartments where they would not be visible and avoid noise issues.

SITE
GREEN SQUARE
ABBOTSFORD, MELBOURNE

CLIENT/PROJECT MANAGER
SALTA PROPERTIES

PROJECT TIMELINE
2014



CHALLENGES CONT.

"The client did not want balcony-mounted condensing units with the systems," Andrew says. "So we worked closely with both the architect and the engineer to understand what was and what wasn't going to work. This led to relocating around 100 condensing units from the basement car park to a rooftop location to avoid issues around heat rejection."

With the apartment buildings up to ten storeys high including basement car parks, refrigerant pipe runs became an important consideration. Rival Air began a review of various air conditioning solutions that would provide the flexibility of longer or shorter pipe run lengths, depending on the location of the apartment. Additionally, it was important that the design of the indoor units was also consistent.

"We wanted to avoid the situation where a semi-commercial style product would be required in apartments where long refrigerant pipework runs were present, while a domestic type product was used in other areas where refrigerant pipework runs weren't as long," says Andrew.

SOLUTION

After comparing available systems, Rival Air selected Fujitsu General's Airstage J-II Series range of heat pump units to provide cooling and heating to the development's one and two bedroom apartments, as well as the Quest serviced apartments.

"Fujitsu offer a wide range of products with long refrigerant pipe runs, and they also offer a consistent range of indoor units across their domestic and light commercial range and this consistent look was important to the developer."

Additionally, Andrew says Fujitsu was able to provide the flexibility for apartment buyers to elect to upgrade their system. He says around 70 apartments were upgraded to multi-systems to provide individual conditioning of living areas and bedrooms.

The HVAC design for the serviced apartments also required multi-systems to be installed. Quest also specified the installation of reed switches on balcony doors, so that air conditioning automatically switches off when doors are opened.

"Fujitsu were able to fulfil all of these requirements," says Andrew.

Rival Air then set about designing a solution that kept refrigerant pipework runs to a minimum. This resulted in a top down, bottom up approach whereby condensing units serving apartments on the bottom four floors were located in the basement car parks, and those serving the levels above were located on the roof.

"Because of the longer pipe runs lengths afforded by the Fujitsu units, we were able to get more units onto the roof and less in the car park. This was advantageous because of the heat rejection available and also allowed for more car parking spaces to be available."

As well as improving the aesthetics of the development, the basement and rooftop locations also removed any concerns about noise from the condensers.

Considered the best product for this type of application, Fujitsu General's advanced VRF technology used in the J-II Series allows for a total refrigerant piping length of 180m.



“FUJITSU’S PRE SALE SUPPORT GAVE US THE CONFIDENCE TO USE THEIR PRODUCT”

RESOLUTION CONT.

The J-II Series system provides energy efficient cooling and heating via the unit’s DC inverter control, at both full load and low to medium load operation and with any Fujitsu indoor unit. Heat exchanger performance is also substantially improved by the unit’s 3-row large heat exchanger design, while a subcool, dual tube heat exchanger improves cooling performance.

The total combined capacity of the systems installed at Green Square is approximately 3500kW.

According to Andrew, despite the large number of apartments and air conditioning systems across the Green Square project, a central plant was never considered for a number of reasons, including that the provision for individual billing is made difficult.

“The billing associated with central plant and common-type systems have always been an issue in apartment buildings,” he says. “Providing a dedicated condenser for each apartment and individual control is the easiest and most cost-effective way of achieving individual billing.”

KEY LEARNINGS

Construction of Green Square was completed in March 2014 and officially opened by the Victorian Minister for Planning in April 2014. Rival Air provided warranty and maintenance during the obligatory twelve month warranty period, and its service department continues to provide maintenance to the property today. “The systems have performed very well since the project was completed in March 2014 and we’ve been more than happy with the product,” says Andrew.

All areas of the project, from individual apartments and serviced apartments to lobby areas, feature Fujitsu indoor units that add to the luxury interior design created by SJB. “No one sees the condensing units,” says Andrew. “It’s all about the indoors and Fujitsu offered us a very similar look of unit all the way through the project. So whether it required a short refrigerant pipe run or a long one, we knew we had that consistency.”

To this end, he says Fujitsu General’s pre-sales support was vital to the success of the project. “Fujitsu’s pre-sales support gave us the confidence to

use their product. They provided us with the answers and information we needed including the types of controls and multi-systems we could offer as upgrades. I don’t think we would have got a better product for this particular project than Fujitsu.”

COMPLETION DATE:
MARCH 2014

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APPLICATION:
RESIDENTIAL APARTMENTS

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INSTALLER / CONTRACTOR:
RIVAL AIR PTY LTD

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PRODUCTS:
42 J-11 SERIES HEAT PUMP
OUTDOOR UNITS
165 INDOOR UNITS
464 SPLIT SYSTEMS
8 DUCTED SYSTEMS

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TOTAL SYSTEM CAPACITY:
3500KW