



## Adelaide's new heart of business Creating a benchmark for workplace innovation and wellness

### 83 Pirie

#### Project Address

83 Pirie Street, Adelaide SA 5000

#### Consulting Engineer

BESTEC

#### Equipment

6 x Climate Wizard CW-H15S Plus units  
4 x Climate Wizard CW-80 units

**Located at the true centre of the CBD, 83 Pirie is a state-of-the-art business destination and perfectly positioned to align business with lifestyle, providing convenient access to Adelaide's most dynamic attributes.**

**With lifestyle amenities including the city's best shops, restaurants, and cultural destinations just moments away.**

**Designed to achieve world class energy efficiencies and environmental standards, with 17 levels of office space and 360m<sup>2</sup> of lettable retail space.**

Situated in the heart of Adelaide's business precinct, 83 Pirie Street is building a sophisticated workplace where lifestyle and innovation are at the forefront. With a focus on sustainability and wellness, a state-of-the-art HVAC system would be required to achieve world class energy efficiencies and environmental standards.

### Project Requirements

With 17 levels of office space, 360m<sup>2</sup> of retail space and over 30,000m<sup>2</sup> total area, 83 Pirie Street required a total of 36,620 l/s of pre-cooled outside air to effectively supply the building's air handling units. With a strong focus on energy efficiency and sustainability it was important to deliver an HVAC solution that would meet rigorous standards as part of the projects certifications. The project also called for seamless connection to the Building Management System allowing for automatic, continuous, safe, unattended operation of the building's air conditioning system.

- To provide a total of 36,620 l/s of pre-cooled outside air required by the air handling units
- To install highly efficient cooling systems that can connect to the Building Management System
- To meet WELL Building Standard™ requirements for a Gold WELL rating

### Challenges

- System selection to provide the specified capacities, performance and automatic operation for continuous, safe, unattended operation at the specified design criteria conditions
- Commission and test the plant to ensure compliance with the performance and guarantee requirements



## The Solution

After evaluation of the project requirements, The Climate Wizard indirect evaporative air conditioning technology was selected as the most efficient solution. To meet the various needs and challenges, **6 x CW-H15S Plus units** and **4 x CW-80 units** were installed, delivering a total of **37,300 l/s** pre-cooled, outside air into the plantroom as a plenum providing treated fresh air for the air handling units located within the plantroom.

- Outside air pre-conditioning system incorporating indirect and indirect-direct evaporative cooling units and distribution systems
- The coolers' high efficiency heat exchangers and fan motors will provide a long life and efficient operation
- BMS and BACnet interfaces were provided for external controller configuration



## Results

The total input power for 6 x CW-H15S Plus and 4 x CW-80 is **53.2 kW**. A baseline DX system handling the total outside air heat load would have an input power of approximately **252.5 kW** considering a typical COP of 2.9.

- The installed Climate Wizard system saves **19 9.3 kW** of peak input power, equivalent to a 79% reduction
- An annual input energy saving of over 352,000 kWh

The resulting performance of the installation will contribute to several highly regarded certifications, including: 6 Star Green Star Design & As-Built Certified rating, a 5.5 Star NABERS Energy rating, a Platinum WELL rating as well as a PCA A Grade rating.

## Performance Data

Model	Supply Air Temp (°C)	Pre-Cooling Capacity (kW)	Pre-Cooling COP	Air Flow (l/s)
CW-H15S Plus	19.4	36.2	16.5	1,600
CW-80	21.4	128.8	7.0	6,400



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