



Ken Rosewall Arena

KEY POINTS

- Immediate comfort improvement
- Reduced heat-related illnesses
- Avoided costly air-con installation
- Seamless integration with flexible canopy roof
- Lightweight, low-impact installation
- Quiet, unobtrusive operation
- Fully BMS integrated with variable speed control

CLIENT

Ken Rosewall Arena is a 10,500-seat, award-winning sports and entertainment venue with an 8,000m² canopy roof, requiring enhanced air circulation to maintain comfort in its unique enclosed yet open-air structure.

CHALLENGE

Ken Rosewall Arena faced significant temperature control challenges, particularly during peak summer months, when high temperatures and large crowds created uncomfortable conditions for players and spectators.

While the 8,000m² canopy roof provided essential weather protection, it also trapped heat and restricted natural airflow, allowing warm air to build up inside the venue. The arena required an energy-efficient cooling solution to enhance thermal comfort, reduce heat buildup and operate effectively within its flexible roof structure without adding excessive weight or requiring modifications.

Additionally, with operational costs in mind, the system needed to be cost-effective, reducing reliance on energy-intensive air conditioning while ensuring consistent air circulation across the arena.



TESTIMONIALS

"Thermal comfort for spectators is provided with large air movers above the stands."

COX ARCHITECTURE

"In extreme heat, spectators are cooled by fans located underneath the fabric roof."

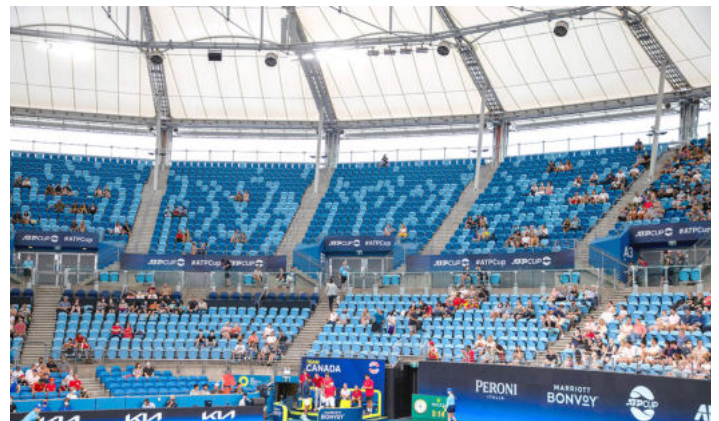
ARUP DESIGN

SOLUTION

To address heat buildup and restricted airflow circulation, Ken Rosewall Arena installed Airius Diamond and Onyx Series fans, both featuring Airius' patented Bypass Technology. Inspired by Rolls-Royce jet engine design, this system uses entrainment to draw air through side intakes, bypassing the fan motor to maximise airflow efficiency while using less energy. The result is enhanced air movement, improving thermal comfort for players and spectators while operating quietly to avoid disruption during events.

The Diamond Series delivers long-range, high-velocity airflow, ensuring consistent air distribution across the arena. The Onyx Series supports the Diamond Series at lower ceiling heights, enhancing airflow circulation and redistribution to prevent heat buildup under the canopy roof. Unlike traditional bladed fans, Airius' system achieves greater air movement with lower energy consumption.

Strategically positioned for seamless integration, the system required no structural modifications, operates silently and does not obstruct lighting. Variable speed controllers enable precise airflow control, ensuring optimal conditions. Since installation, air circulation and thermal comfort have significantly improved, with the arena benefiting from a substantial reduction in energy consumption and carbon emissions.



Airius are the world leaders in destratification fan solutions, saving an average of 35% in HVAC energy costs by recirculating heated air which has risen to the ceiling back to the floor, or by distributing cooled air more efficiently. This reduces energy consumption, costs and cuts the carbon footprint of any building, whilst also improving comfort and environmental control.