

99 Bikes

- Retail Outlet Cooling



99 Bikes needed to refurbish their Air Conditioning and electrical works in their new store in Perth, Australia. Their plan was to remove the ceiling and ductwork and approached Airius for a solution to mix and distribute the conditioned air around the space.

Airius proposed the use of 7 x Pearl Series fans with speed controller, positioned to suit the customer's requirements and ensure efficient circulation, balancing and distribution. Across the summer of 2018-19 the solution has been a great success.



Key Points:

- **Retail Outlet:**
 - Area = 300m²
 - Ceiling Height = 4.5m
- **Airius Used To Replace Air-Con Ducting**
- **Airius Solution = 7 x Pearl Series Fans**
- **Air-Con Efficiency Immediately Improved**
- **Significant Energy Reductions**
- **Significant Capital Savings Through A Reduction In Air-Con Ductwork**
- **Near Silent Operation**
- **0-100% Speed Controllable**

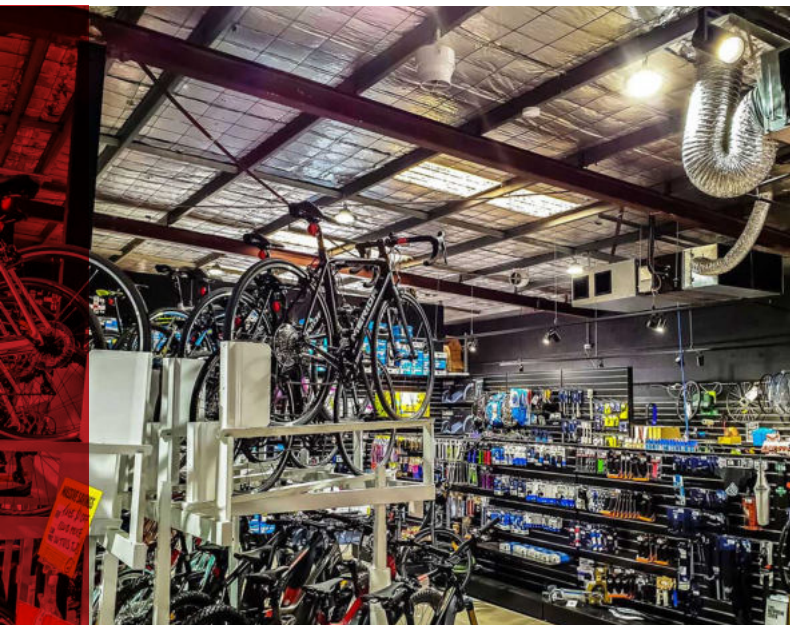
99 Bikes is an Australian wide business that specialises in the sales and maintenance of all types of pushbikes or cycles.

Gareth Halliday, General Manager at ECO - Climate Solutions, was contacted by 99 Bikes who are a regular client of theirs, to design and install an electrical and mechanical fit project for their new Belmont store and quote to achieve that aim.

Eco Climate solutions specialise in resource efficient air conditioning systems and energy efficiency products. After having read an Airius publication about the efficiency of the Airius fans as a low-cost substitute for air conditioning ductwork, they approached Airius to work up a solution.

The store is approximately 300 sq. metres in size and has a 4.5 metres high ceiling. Located in Perth, high temperature summer cooling as well as some winter heating efficiencies were key design criteria.

As the original ceiling was being removed to open up the space, Gareth designed a system to also remove all of the old supply and return ductwork from the



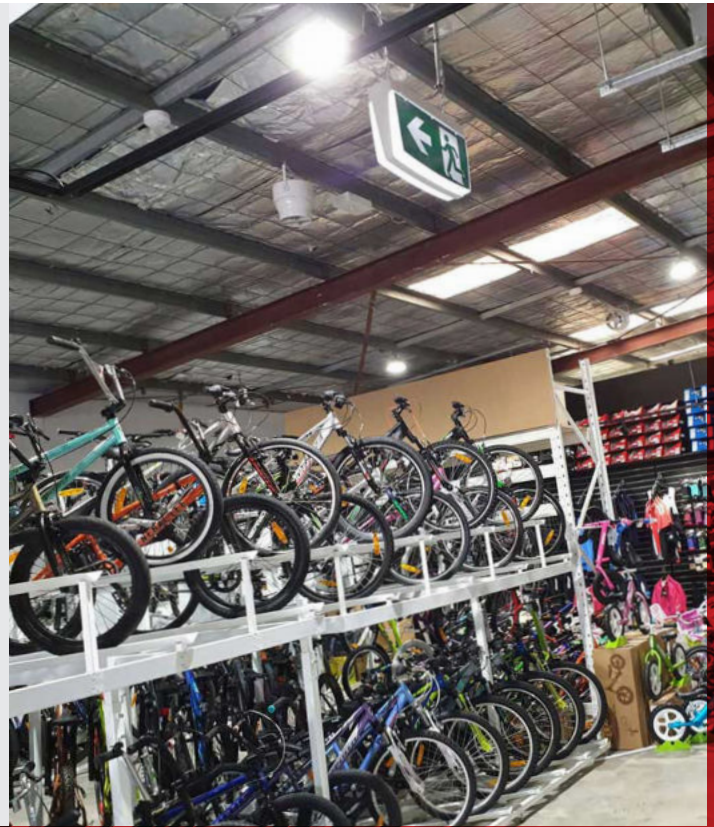
CASE STUDY - RETAIL COOLING



four existing 14kW Panasonic ducted reverse cycle air conditioning systems. Eco -Climate Solutions (ECS) then simply supplied conditioned air out of the horizontal registers.

Four Pearl Airius fans were located horizontally at the discharge points of the ducted units for air circulation and three more Airius fans were installed vertically around the space for de-stratification and air mixing, suspended just off the roof/ceiling to ensure there was adequate summer and winter air mixing throughout the space.

This install took place in August 2018 and right across the 2018-2019 hot summer period, the client has been extremely happy with the thermal comfort in the store.



Gareth Halliday from ECS has advised they are also very happy with the result and are looking to undertake some detailed energy modelling of the facility over the next few months to understand the energy savings this type of innovative installation has created.

Gareth advises though, that significant energy and cost savings have certainly been achieved with the removal/non replacement of ductwork and the reduced static pressure issues combined with a substantial reduction in cap ex, materials, maintenance, coordination, commissioning and plant size expenditure.

Additionally, new opportunities arise for architects due to the open uncluttered ceilings and increased floor to ceiling height that offer even more opportunities from this type of install.

The overall result has been a success and ECS are looking to utilise this unique solution in further installations as the opportunity arises.