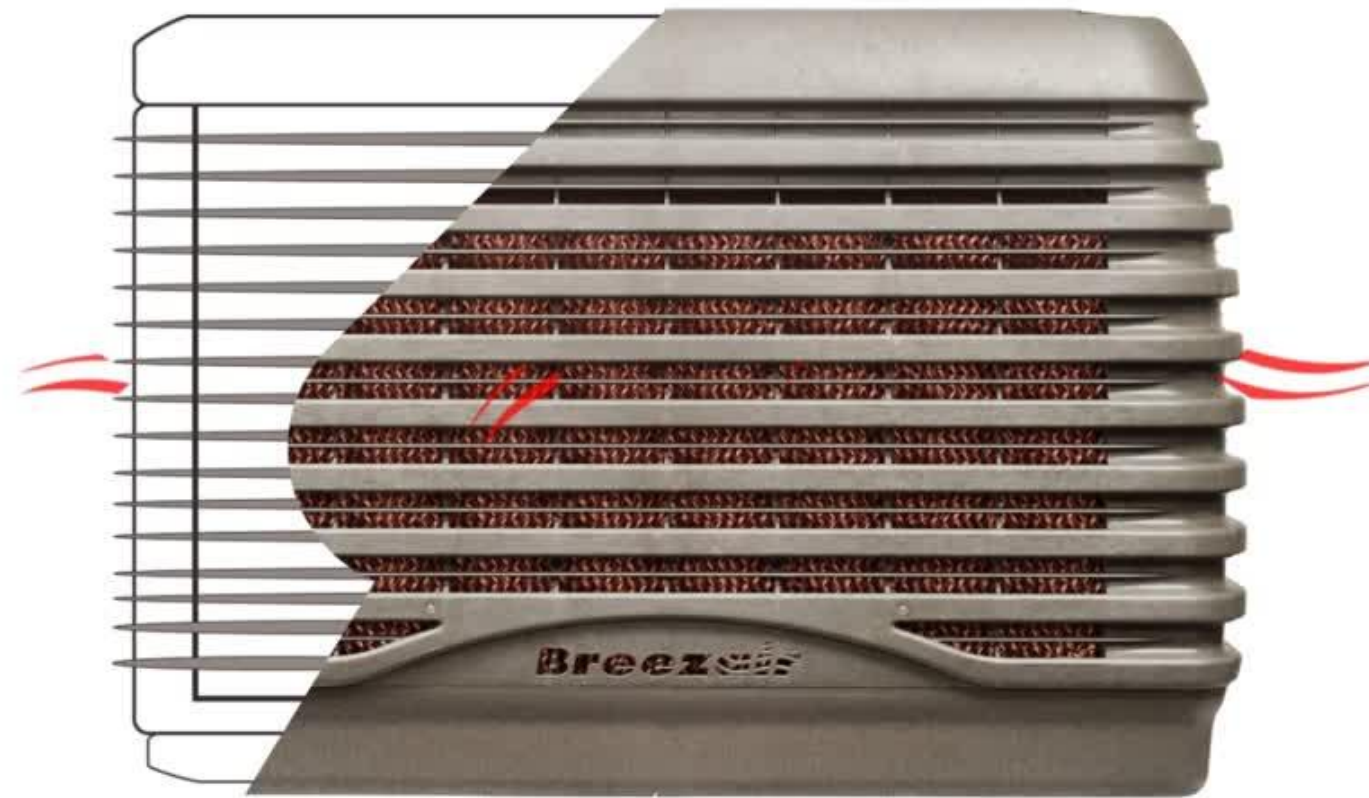


 AI Naseem

SEELEY
INTERNATIONAL 

How Evaporative Cooling works



AXIAL FAN MODELS TBS580 , TBSI580



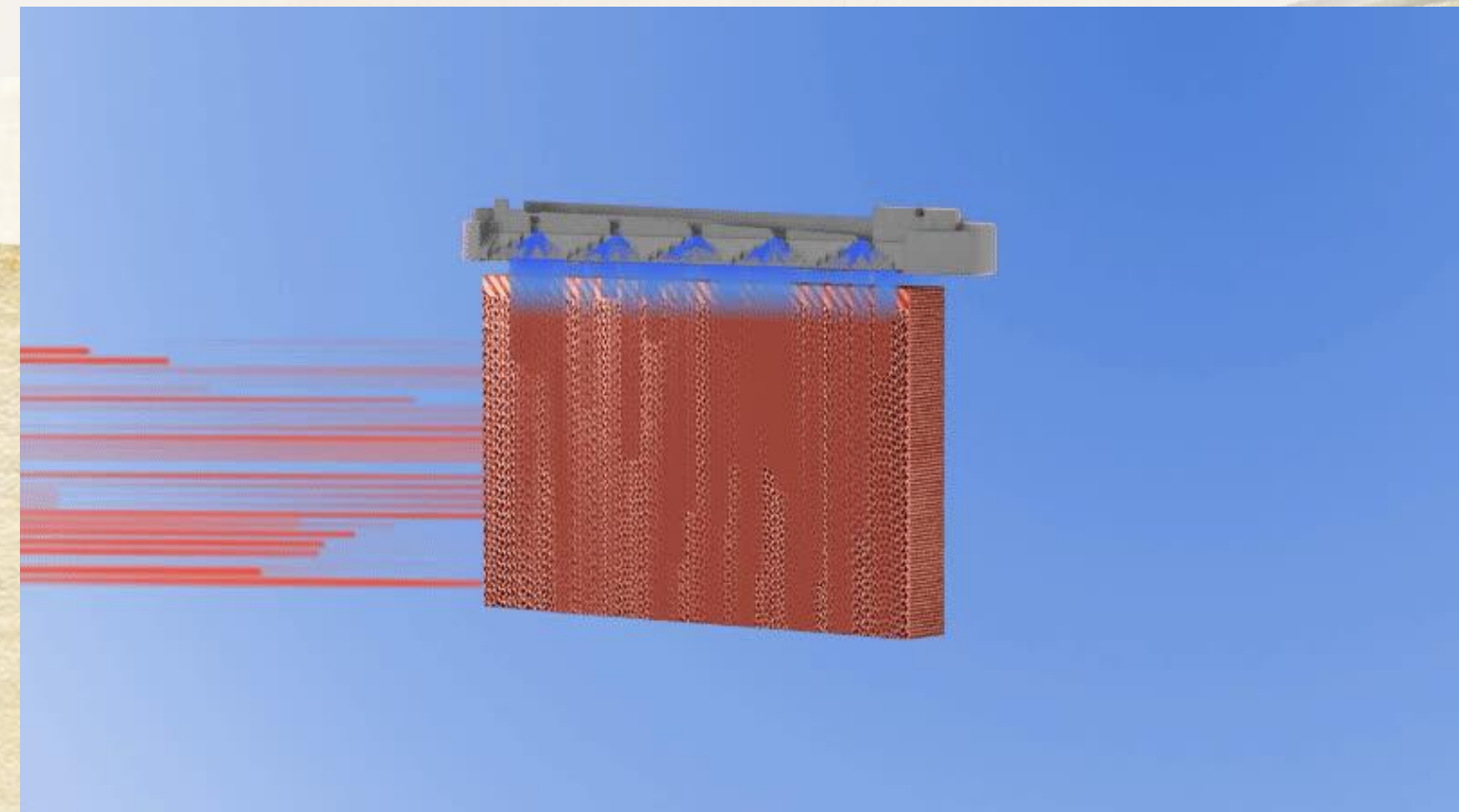
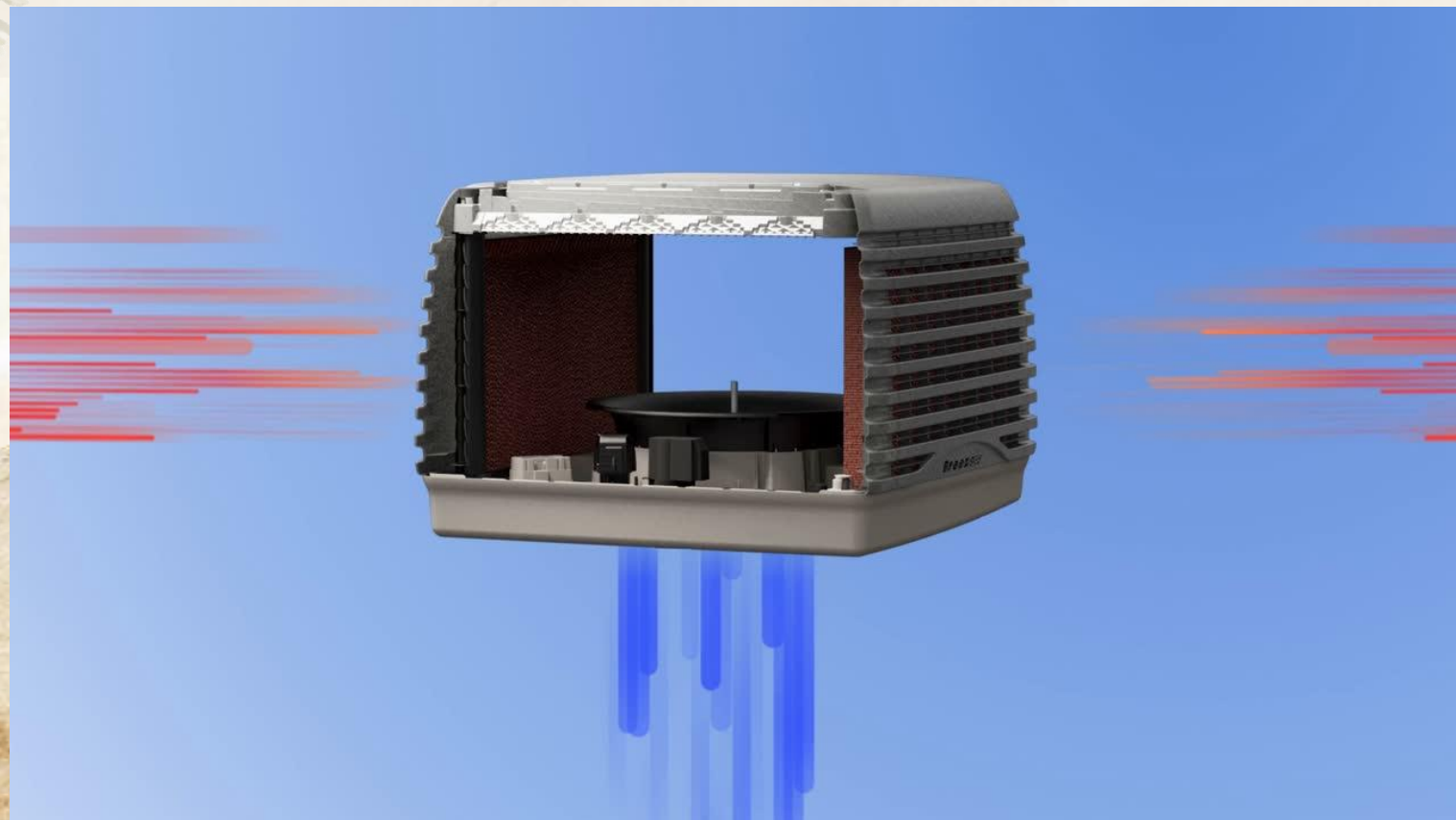
- **Cooling Capacity: 16kW – 18kW**
- **Airflow@80Pa: 10.000 - 11.000 m³/h**
- **Water evaporation: 23l/h @5°C of WBD and constant air flow at 80Pa**
- **Water bleed: 3,5 l/h @300ppm of water inlet quality**
- **Back pressure up to 160Pa (220Pa for inverter drive fan on TBSI)**

Hot air, passing through the wet panels gives up some of its thermal energy, in the form of sensible heat, to the water on the panels.

Water uses this energy, in the form of latent heat, for a state transformation from liquid to vapour.

Isenthalpic process. Conversion of sensible heat to latent heat occurs at a constant enthalpy value.

Adiabatic cooling. There is no direct exchange of work or heat with the environment.



	Breezair
Provides 100% fresh, filtered air	✓
Does not recirculate indoor air	✓
Improved IAQ	✓
No chemical refrigerants / low carbon footprint	✓
Only water used	✓
Easy to install & maintain	✓
Runs on single phase, 1.1 kW power supply	✓
Low running costs (up to 90% lower than refrigerated systems)	✓
Cooling improve as temperatures rise	✓
Australian made & owned	✓
Not drying the air	✓
LEED certification	✓
Industry 4.0	✓

Comparison of Breezair to Conventional A/C

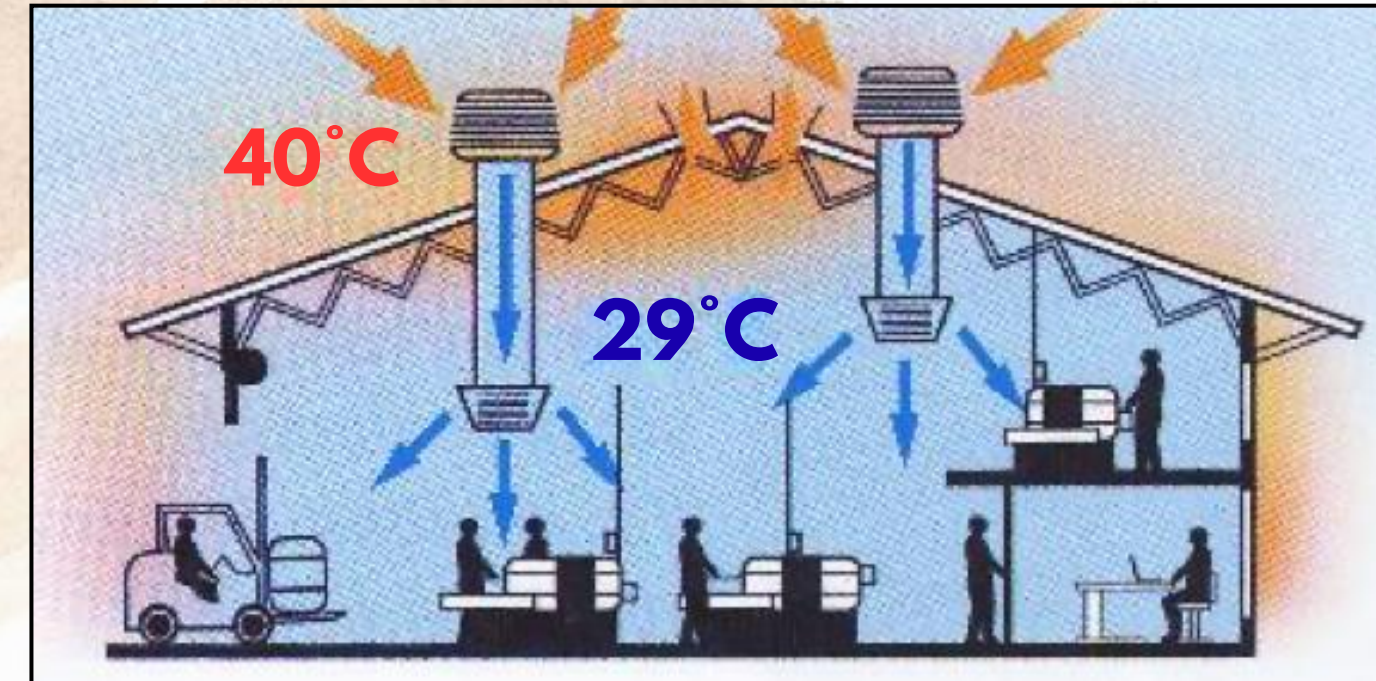
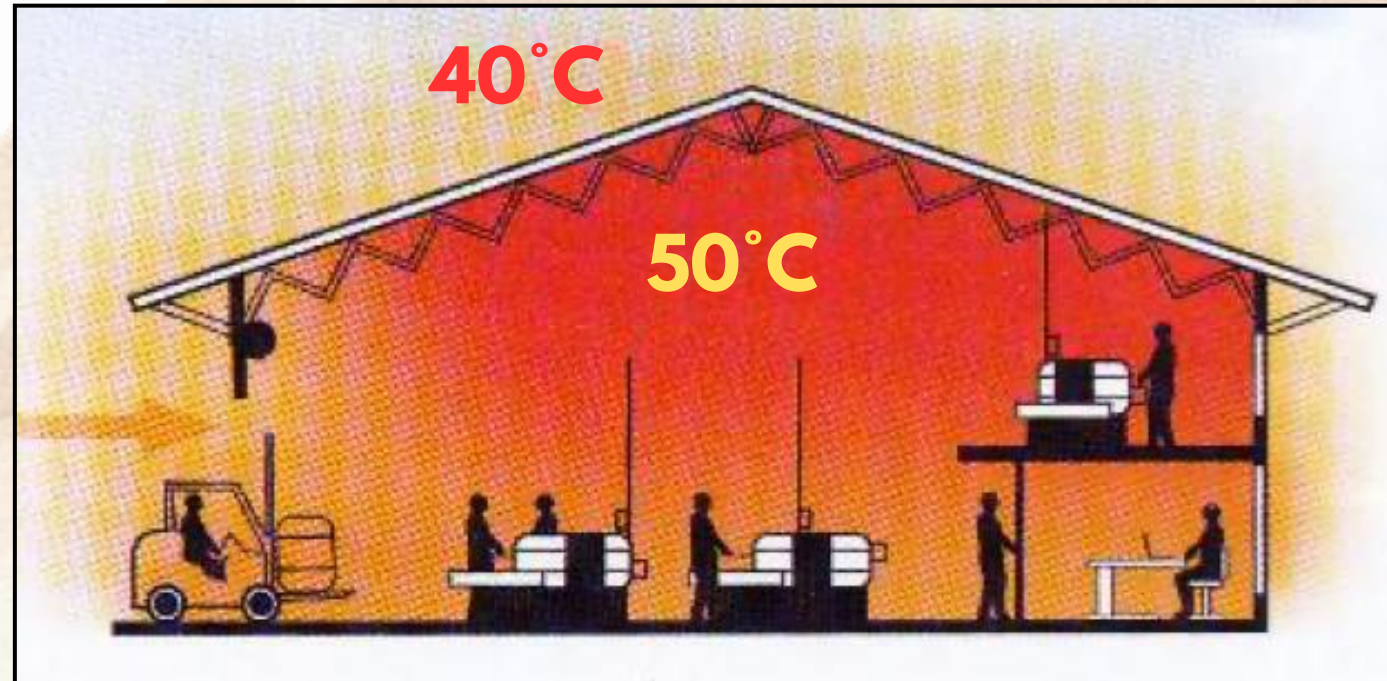


Description	Breezair -17TR	Wall mount split A/C- 2TR	Duct split A/C-5TR	Package A/C -15TR
Air Flow (CFM)	6420	680	2000	6000
Cooling Load (KW)	18.4	5.39	23.5	53
Input Power (KW)	1.1	2.5	11.5	25
Power Supply	220-240/1/50	220-240/1/50	380/420/3/50	380/420/3/50
Water Consumption(l/hr)	23	--	--	--
Weight (KG)	71	98	230	512
Thermostat or Remote	Touch Screen & Remote	Remote	Wall mount Thermostat	Wall mount Thermostat
Wi-Fi Module	YES	NO	NO	NO
BMS system	YES	NO	NO	NO
Electricity Cost (QAR)	626 /Year	8,541/Year	13,096/Year	9,360/Year
Water Consumption cost (QAR)	44/ Year	--	--	--
Annual Maintenance cost (QAR)	2,400	16,200	10,800	7,200

Water Consumption Details

Items	Description	Lit/Year	L-m3	M3/Qar	Total Cost/Year
Shower Head	4 people* daily 8 min shower, 9L/min water efficient shower head	105,120	105.12	5.4	567.6
Garden watering	2*Per week,*3 summer months, 20L/min, 60 mins per water	28,800	28.8	5.4	155.5
Toilet	4 People , 5L per flush average (dual flush) ,35 flushes per week	36,400	36.4	5.4	196.6
Washing Machine	70L per Load, 5 Loads per week	18,200	18.2	5.4	98.28
Lawn Sprinklers	2*per week,3 summer months, 20L/min,60 mins per water	28,800	28.8	5.4	155.5
Bathing	Tub half full,65L tub, 1 Bath /Day	23,725	23.73	5.4	128.2
Swimming Pool	14400L/yr Last through evaporation	14,400	14.4	5.4	77.76
Kitchen Sink	30L/day-Dishes, Rinsing food Etc.	10,950	10.9	5.4	58.86
Breezair	Evaporation 23L/day	8,280	8.2	5.4	44.28

DEC (DIRECT EVAPORATIVE COOLING)

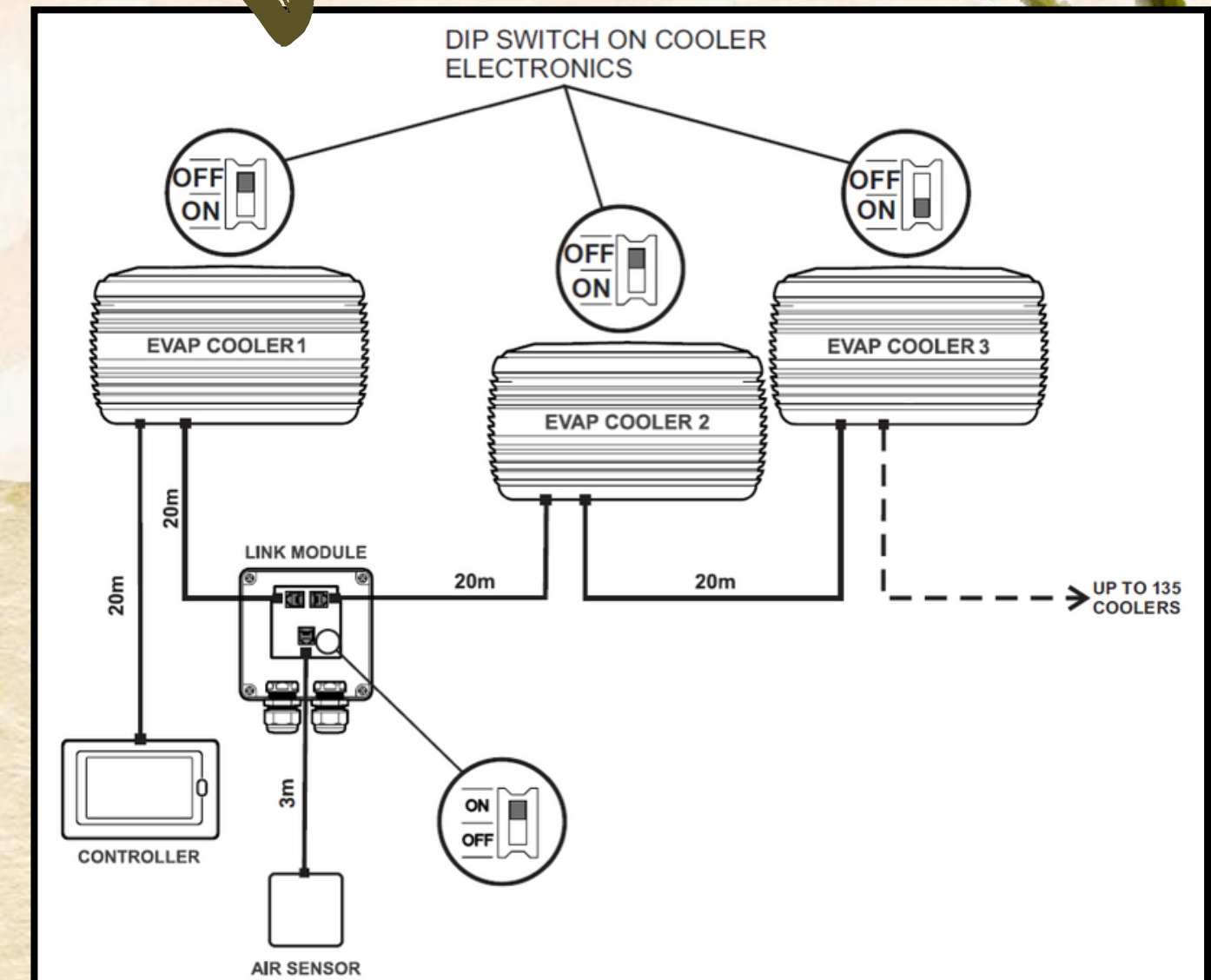
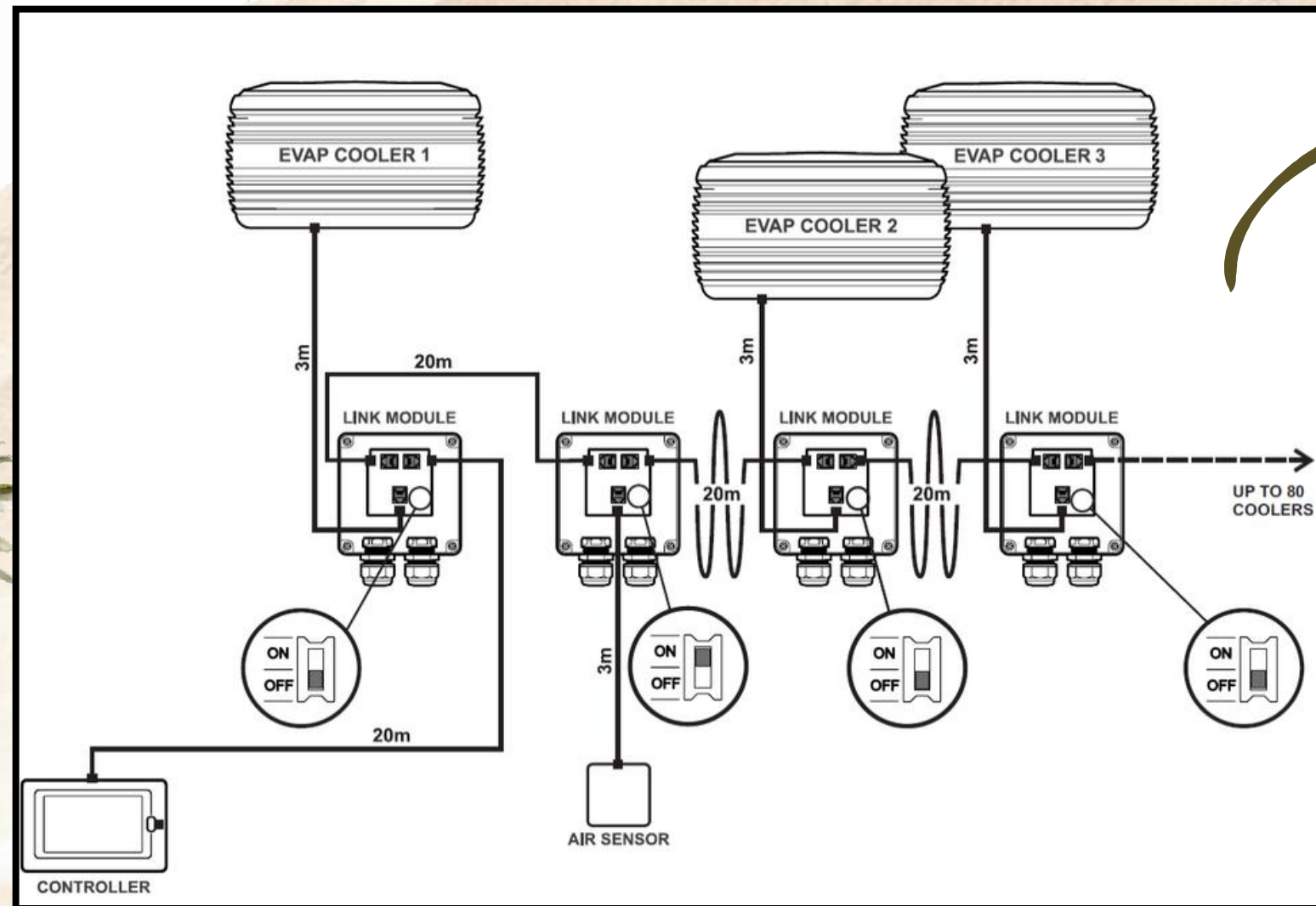


Evaporative cooling can be used in all cases when there is high heat load and it allows a high energy saving compared to traditional systems, with a lot of different advantages, including:

- Low maintenance
- Reduced running and installation costs
- Reduced environmental impact (no CFC)
- Better Indoor Air Quality
- 100% fresh air from outside
- Filtered air (G1/G2)

What's New

Multiple Evaporative Coolers



MAGIQTOUCH Product suite summary



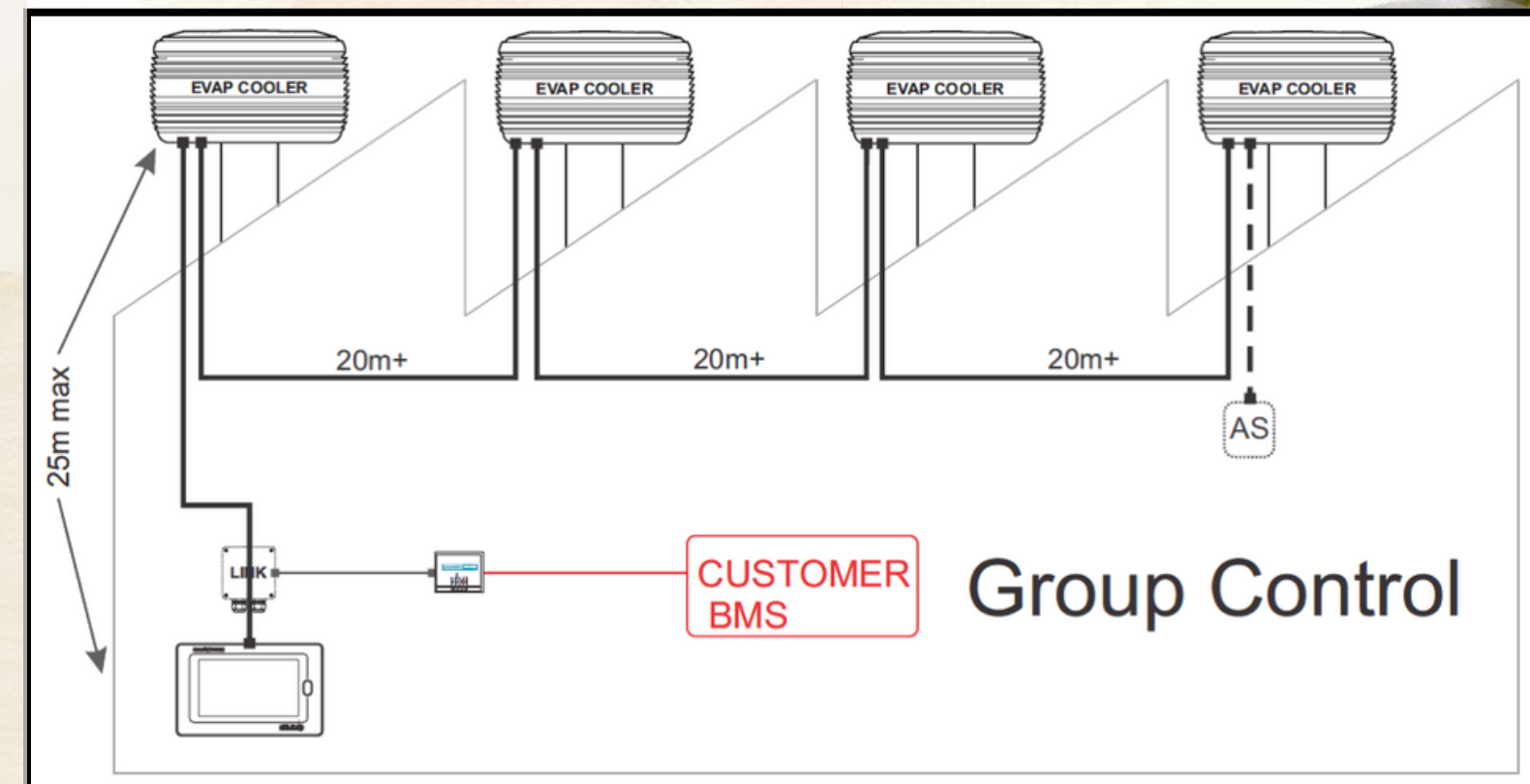
BMS connectivity

MaglQtouch™

BMS Industrial Controller MS1 - Slave

MaglQtouch Wall Controller Functions:

- Full system control
- Simple mode -Cool / Vent
- Advanced mode - Temp or Fan speed
- Program mode - schedule
- Temperature sensing in controller
- Error display
- Optimise system settings
- Water management
- Service access - diagnose individual coolers



Where to install evaporative coolers:

Mosques

Churches

Mina tent city Saudi Arabia

Schools

Bus

stations

Garages and automotive

Vehicle testing centres / car workshops

Garages and automotive



Bus stations



Vehicle testing centres / car workshops



**Mina tent city
Saudi Arabia**



Schools





Mosques

Churches



Case studies in UAE

Type of Business

Desert Island Resorts & Spa – horse stables



Conditions:

Imbalance of the cooling system due to fresh air intake created uncomfortable conditions for the horses including the recirculation of not so hygienic air.

Results:

With Breezair installed and proper extract system designed, there is 100% cool fresh air inside the stables, the extract systems remove the smell. With intelligent controller the system maintains positive air flow providing comfort condition for the horses inside the stable

Previous Cooling System:
Conventional Air-conditioning Systems with louvers on the wall for fresh air intake



Breezair System:

Installed Breezair units providing general comfort cooling for the entire space along with extraction system and using the existing louvers



Case studies in UAE

Type of Business:

Vehicle Testing Center – Licensed by RTA

Previous cooling system:
None

Conditions:

The heat produced from the vehicles together with the summer heat led to very uncomfortable conditions for the staff who found the high temperature and smoke in the testing center very debilitating.

Breezair System:

Design for spot cooling, Breezair were installed for the working spots identified by the client.

Results:

- With installation of Breezair units over the roof and attractively on structured ducts supplying cool air into the testing center provide temperature relief and frequent air changes to remove hot air smoke from the testing base
- The Road Transport Authorities (RTA) who are managing the testing centers has created cooler and healthier environment for the staff and also initiated for providing air cooling system in other testing centers.



Case studies in UAE

Type of Business

Automotive Tyre Workshop

Previous Cooling System:

No Existing Systems ventilation fan

Conditions:

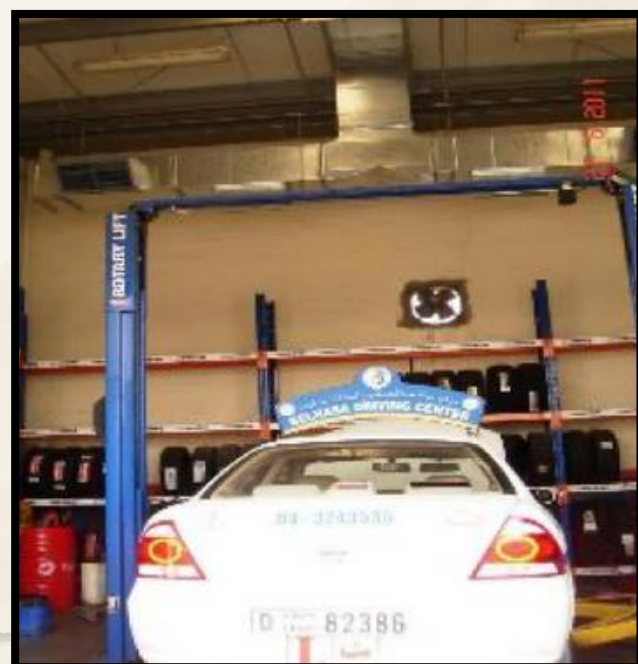
During summer months, the Indoor conditions are very oppressive and uncomfortable for workers in area due to open nature of the typical shops.

Breezair System:

Design with Breezair coolers and installed with air distribution system to cover most of the areas.

Results:

Comfortable conditions for the workers in a mostly open area created through uniformly supplied cool and fresh even in the harshest conditions



Case studies in UAE



Type of Business Aircraft Maintenance Hangar

Cooling System:
Air cooling system was compared
to conventional AC Systems for
this project



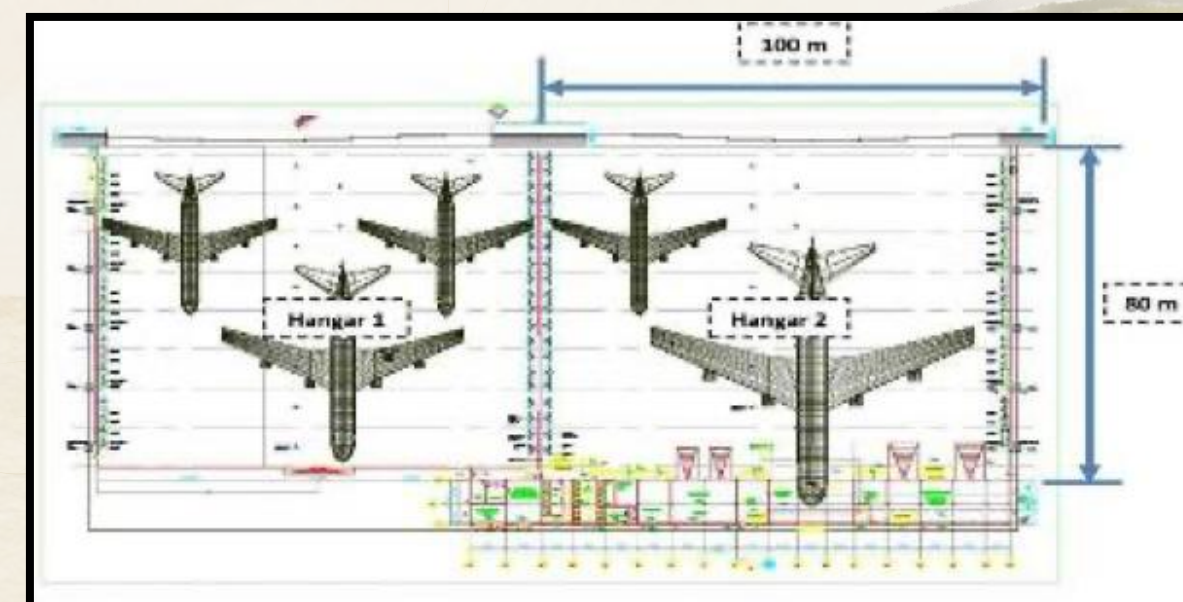
Design Criteria:

Each of the two hangar is about 100 meters long, 80 meters wide and 28 meters height

Design zone temperature to be lower from the ambient condition by 70% of the difference between DBT and WBT say approximately 30-35 oC when outdoor is 46 oC

Results:

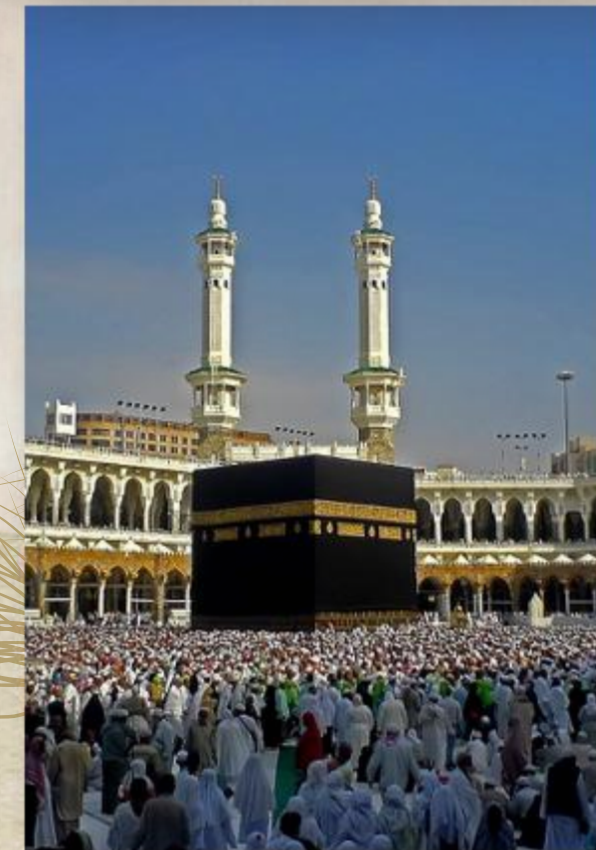
Achieved the desired criteria with Breezair Air cooling System along with the proper extract system and jet diffusers in the Hangar controlled by intelligent controller systems designed completely by Climapro





Units installed at temporary canteen tent, built up by firefighters and Civil Protection

Semi-Open area



Technical cooling

**More than 50
Breezair units
have been
installed in
Marazzi factory.**



Thank you

