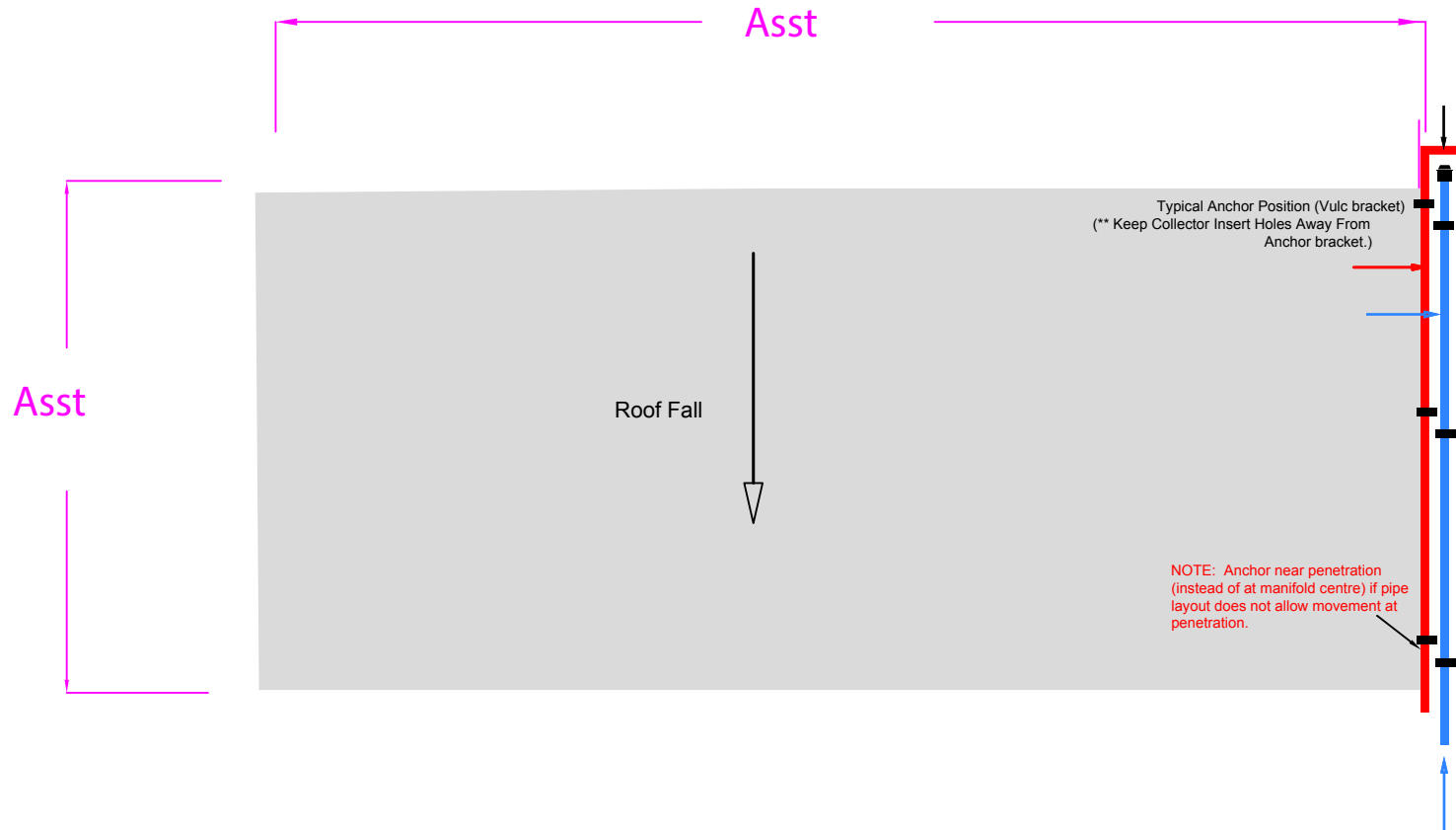


ROOF PLAN



Efficiency and performance

1/ COP (Coefficient of Performance) = 32

2/ Solar performance as heat pump KW output equivalent = 35-45 KW given heat, direct sun and UV (n.b Cloudy days still generate heat on roof)

The Co-efficient of performance (COP) is an expression of the efficiency of a heat pump. When calculating the COP for a heat pump, the heat output from the condenser (Q) is compared to the power supplied to the compressor (W)



Project Title:				
Drawing Title:				
Drawing No.	Date:	Drawn: JW	Approved:	All dimension in mm unless otherwise stated. DO NOT SCALE.

SOLAR PLACEMENT




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Drawing Title:

Drawing No.

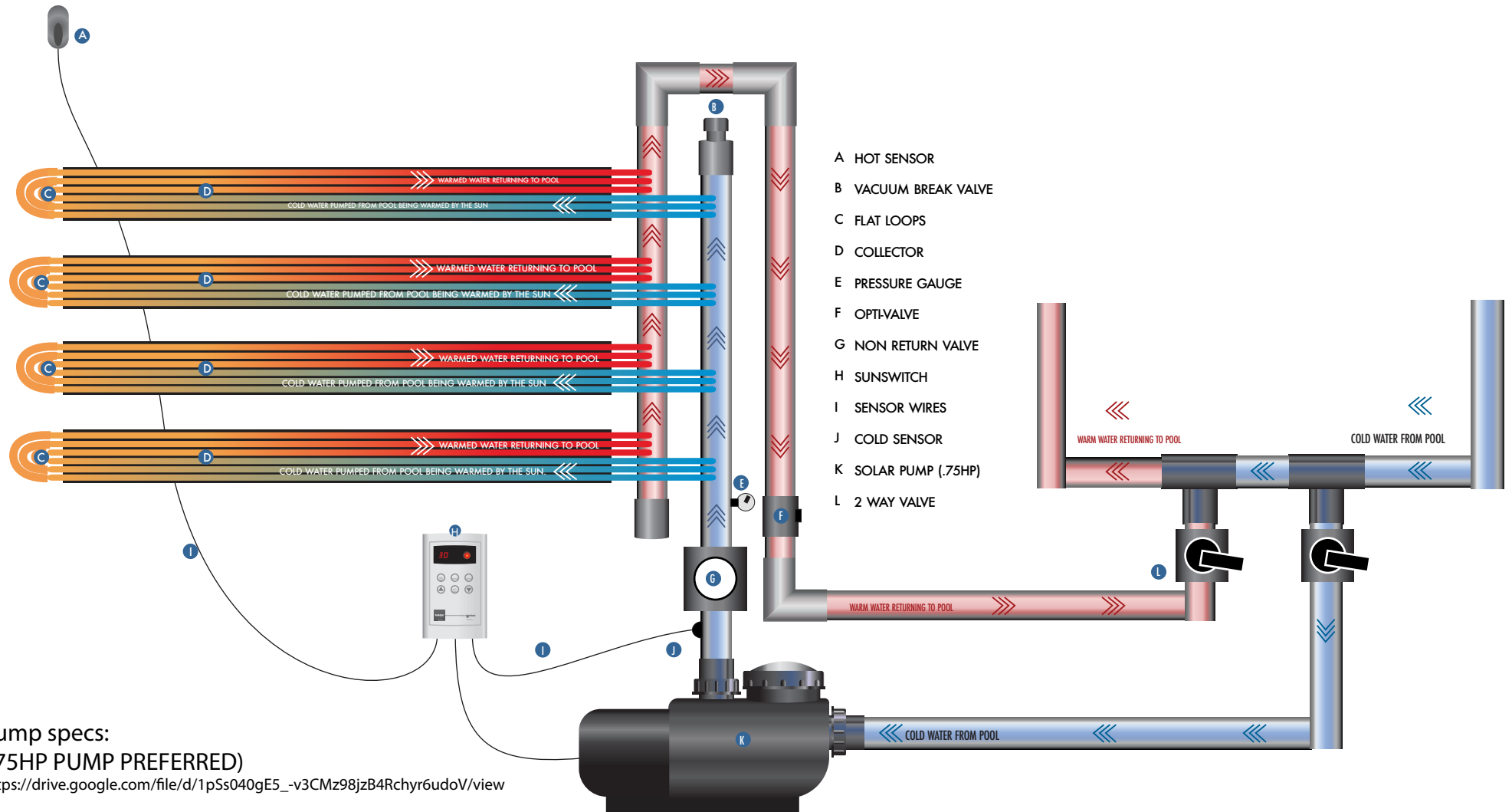
Date: 11 July 2020

Drawn: JW

Approved: 

All dimension in mm unless otherwise stated. DO NOT SCALE.

Solar system plan - separate suction and return



- A HOT SENSOR
- B VACUUM BREAK VALVE
- C FLAT LOOPS
- D COLLECTOR
- E PRESSURE GAUGE
- F OPTI-VALVE
- G NON RETURN VALVE
- H SUNSWITCH
- I SENSOR WIRES
- J COLD SENSOR
- K SOLAR PUMP (.75HP)
- L 2 WAY VALVE

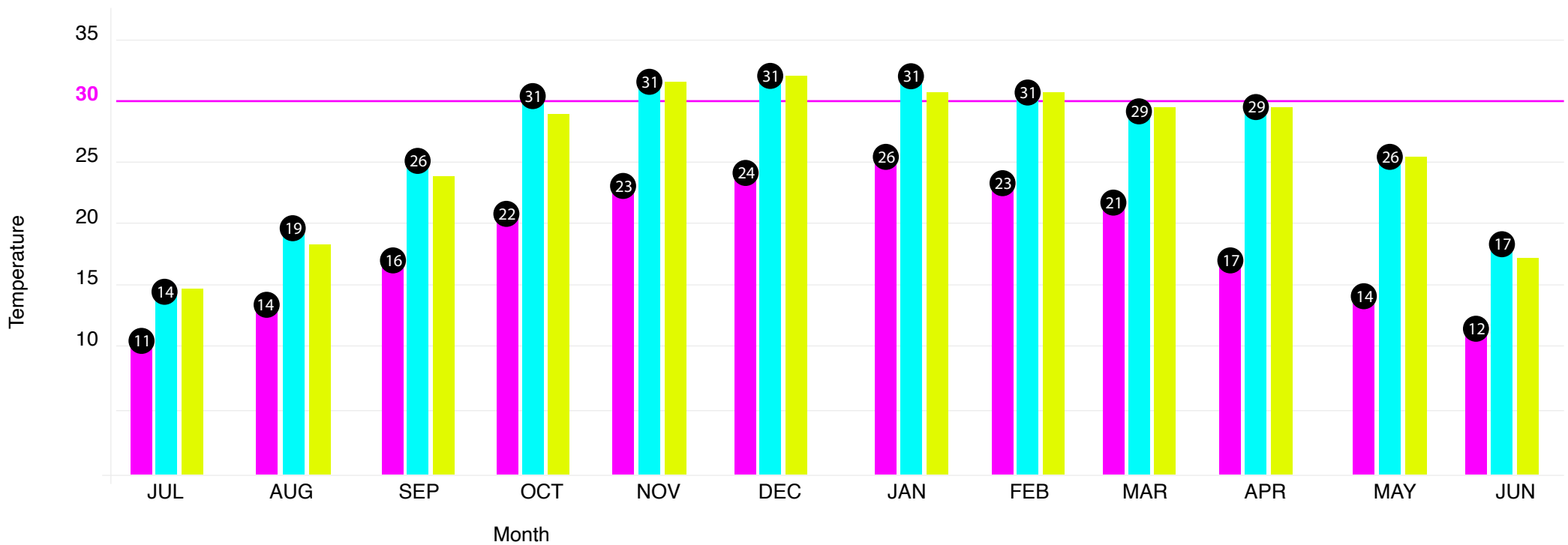
Pump specs:
 (.75HP PUMP PREFERRED)
https://drive.google.com/file/d/1pSs040gE5_-v3CMz98jzB4Rchyr6udoV/view

- * Motor 370W (.5hp)
- * Max Flowrate 280 L/min (16800 L/H)
- * Max head 11M
- * Barrell Unions supplied to suit 40mm ID (48mm OD) PVC Piping
- * Weight 10.6 KG
- * Liquid operating range: 5 to 50 deg C

POOL SOLAR HEATING SPECIALISTS	Project Title:		
	Drawing Title:		
Drawing No.	Date: 11 July 2020	Drawn: JW	Approved:
All dimension in mm unless otherwise stated. DO NOT SCALE.			

Solar heating performance

Roof surface area ratio to pool size
Pool covered - Thermal blanket
30 Degree target temp

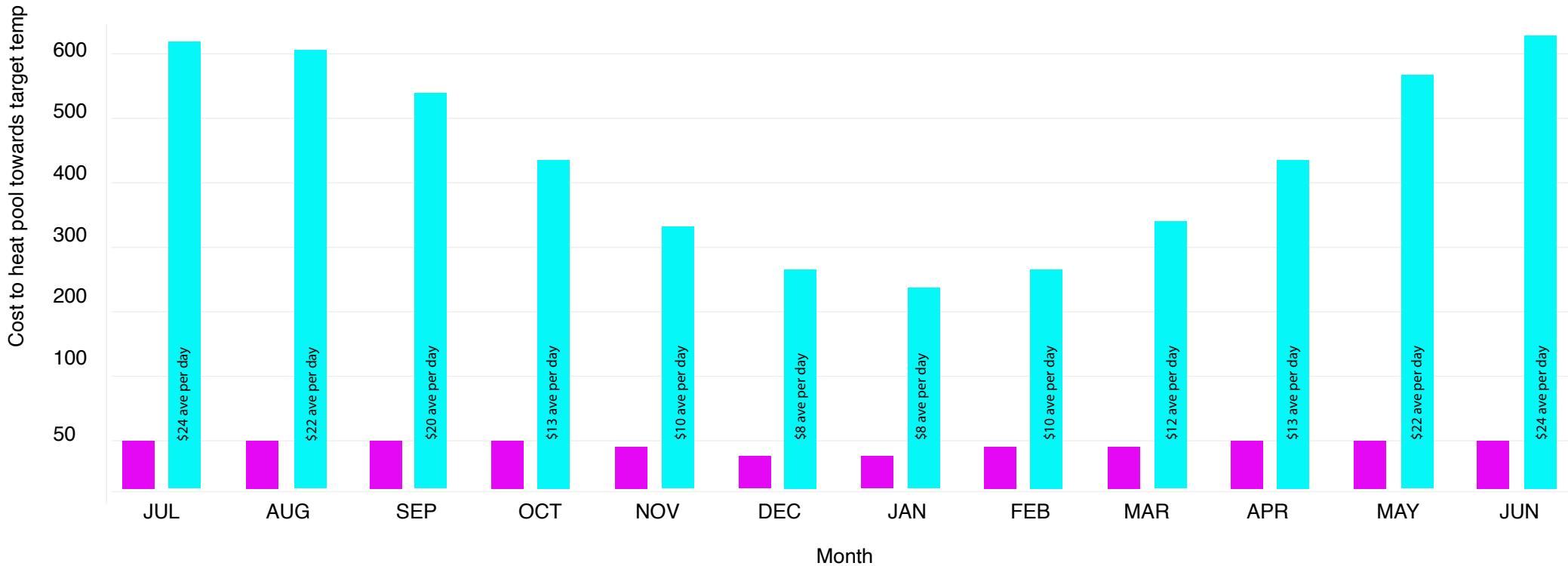


Solar heating performance

- Ambient water temp
- Solar temp - Actual, average temp per month 200% surface area
- Solar temp - Actual, average temp per month 100 - 150% surface area

Pool heating cost to run

30sqm pool
Pool covered - Thermal blanket
200% surface area coverage
30 Degree target temp



Solar cost to run per year \$330

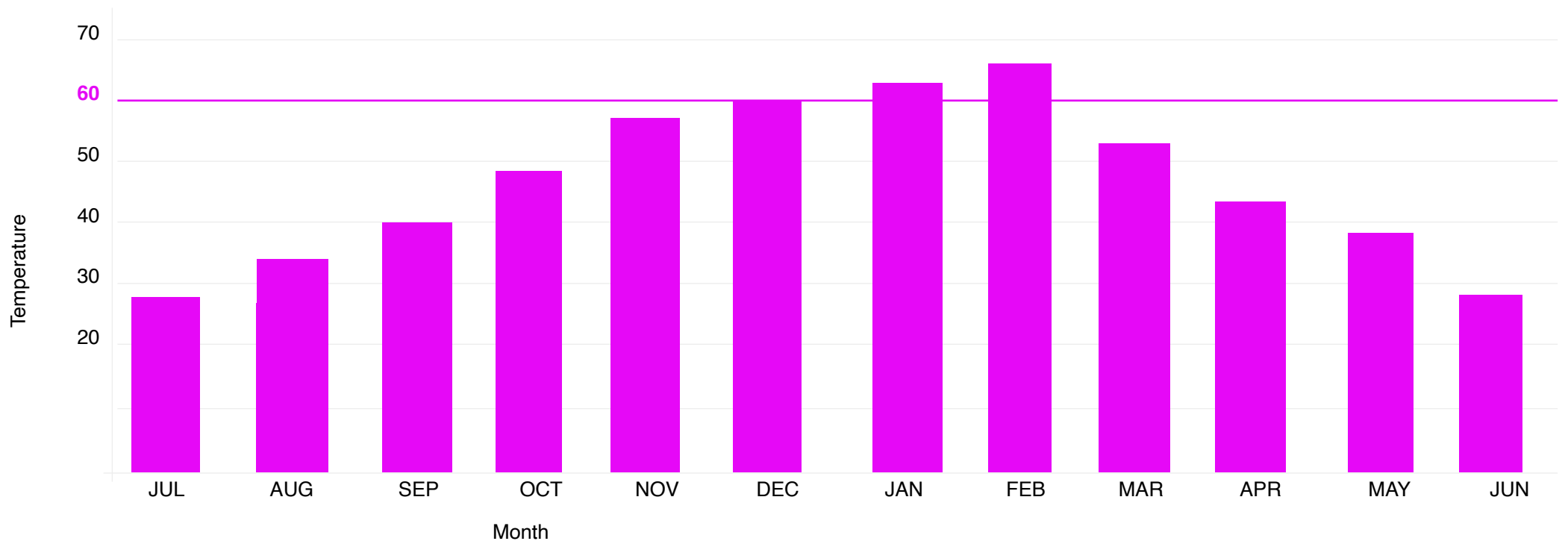
Heat pump cost to run \$5200, approx same output as solar

■ Solar heating - Cost to run per month to achieve target temp

■ Heat pump - Cost to run per month to achieve target temp

Approx Roof temp max readings

Based on historical performance
Max roof temp readings
Based on Auckland



Solar heating performance

■ Roof temp

SUNBATHER SOLAR



A clever sustainable energy source

40KW

200% surface area, solar output

\$350

Cost to run solar system, per season

2.5 YEAR

Pay back, cost to run heat pump vs solar installation*

* 30 sqm solar heating system

POOL
SOLAR
HEATING
SPECIALISTS

SUNBATHER SOLAR



A clever sustainable energy source

9 MONTH

Solar swim season Sept - May

10 YEAR

Unconditional warranty

200%

Solar collector ratio

SUNBATHER SOLAR



Cost savings vs heat pump 20 year period

\$90,000

Cost to run heat pump every 20 years (Average*)

7 YEAR

Replace heat pump appliance every 7 year average

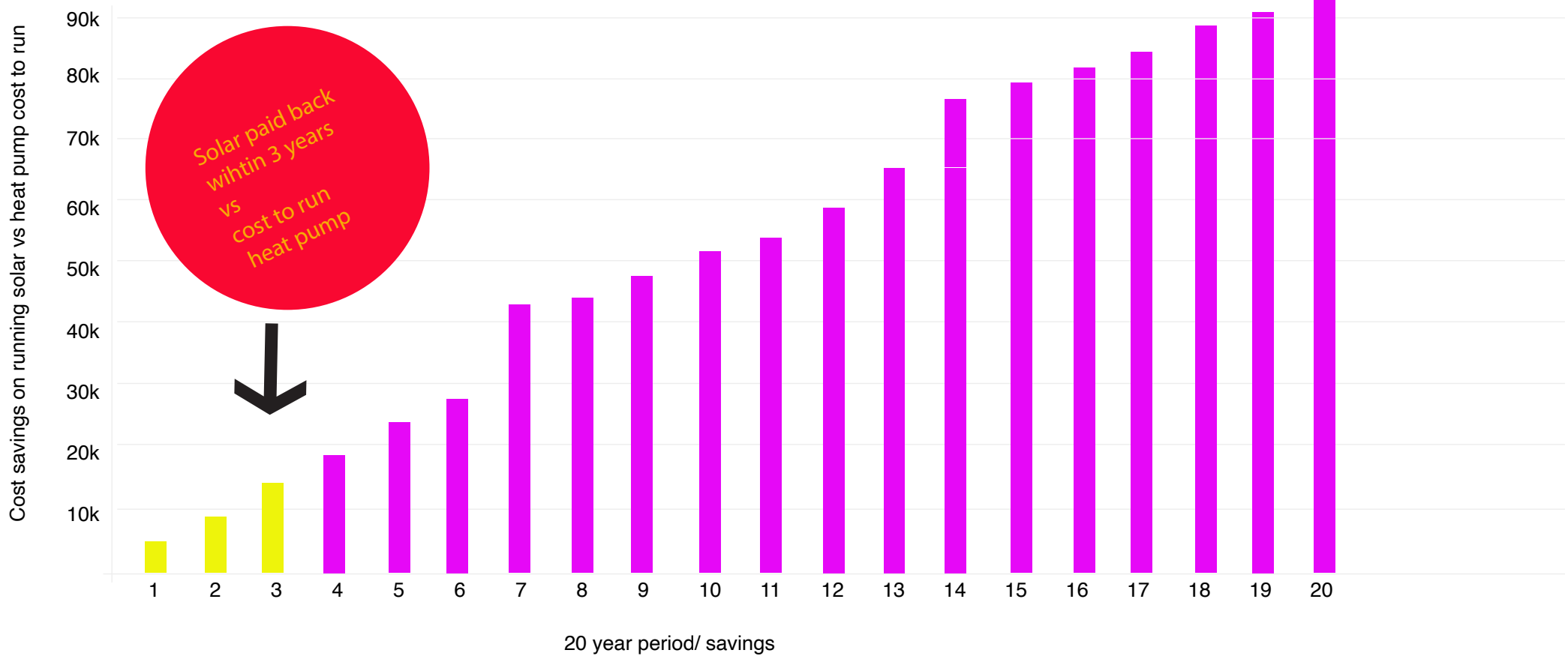
\$4500

Cost to run solar 20 years (Average*)

Pay back over time on solar vs cost to run heat pump

Roof surface area ratio larger than pool surface area
Pool covered - Thermal blanket
30 Degree target temp

- Running heat pump pay back over time
- Replace appliance every 7 year average





Sustainability - Climate Care Certified

Sunbather's dedication to water and energy conservation has again been recognised with more Climate Care Certifications.

Our Thermal Covers have been certified for some time and now, we are proud to announce that our Flexible Strip Solar, Suntube-2 Rigid Panels and our Automatic Security Covers have been awarded this significant accreditation.

At Sunbather, our focus remains on reducing our pool owner's water and energy consumption, and as a bonus, reducing their costs!

About Climate care certified

The Climate Care Certified Program (CCC) verifies and promotes the sustainability of products, systems and installations used in residential and commercial environments. The Climate Care Certified Program aims to recognise and promote sustainability in products, systems, and installations used in both residential and commercial settings.

This program was originally developed for the swimming pool and spa industry, but has since expanded to include other sectors such as backyard and lifestyle businesses.

To ensure impartiality, the Climate Care Certified program utilises independent third parties to evaluate and grant certification to applicants. The certification panel is made up of individuals who are highly regarded as experts in their field and hold no conflicts of interest.

Through the Climate Care Certified program, businesses and homeowners are rewarded for choosing environmentally sustainable products, services, and installations that contribute to positive and sustainable lifestyles. Certification signifies that a product, service, or installation meets the highest standards in sustainability, particularly in regards to water consumption, energy efficiency, noise reduction, and innovative solutions.

By obtaining Climate Care Certified status, participants can promote their products, services, and installations as being approved by an industry-recognised, environmentally sustainable program.

Solar heating doesnt work!



18 Aug 2023
200%



1 Sept 2023
200%



24 Oct 2023
200%