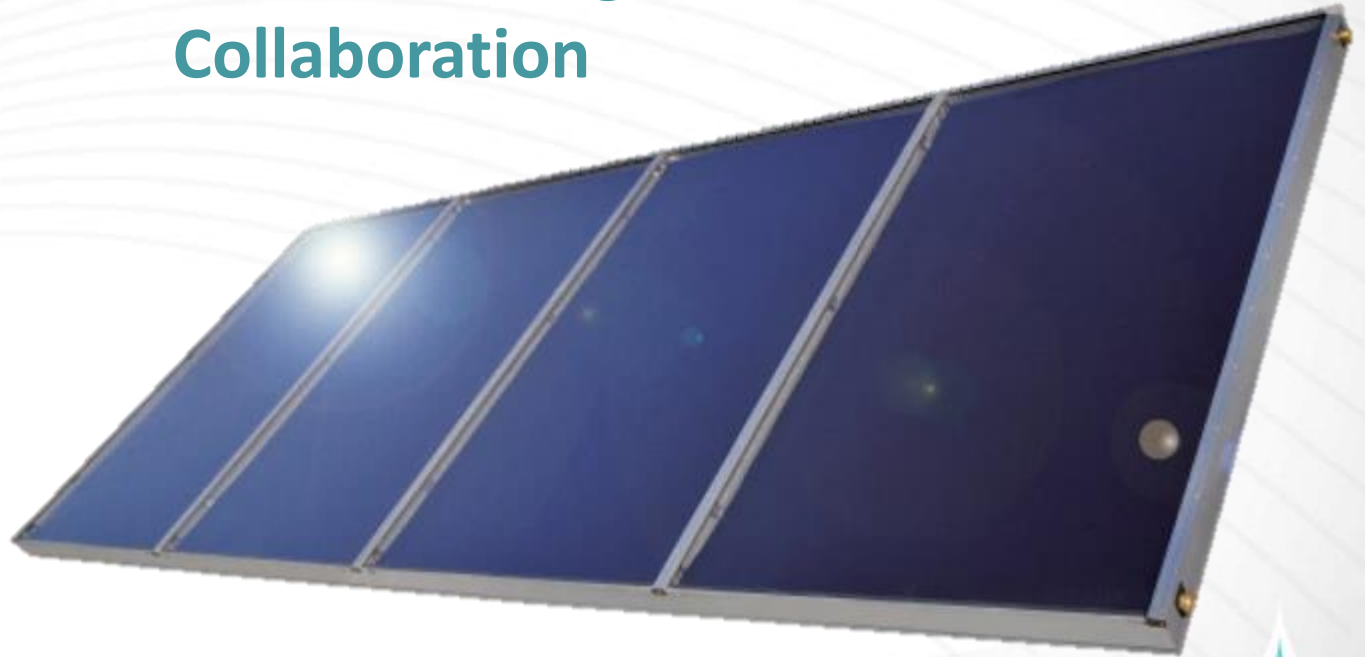


Cape Brewing Company & E3 Engineered Energy Efficiency

A Solar Brewing
Collaboration





SOUTH AFRICA / AFRICA
Suider Paarl

realized 2015

GREENoneTEC **1**
SOLAR COLLECTORS

Geographical position:

Lines of latitude: 33° 43' S

Lines of longitude: 18° 57' E



PROCESS HEATING



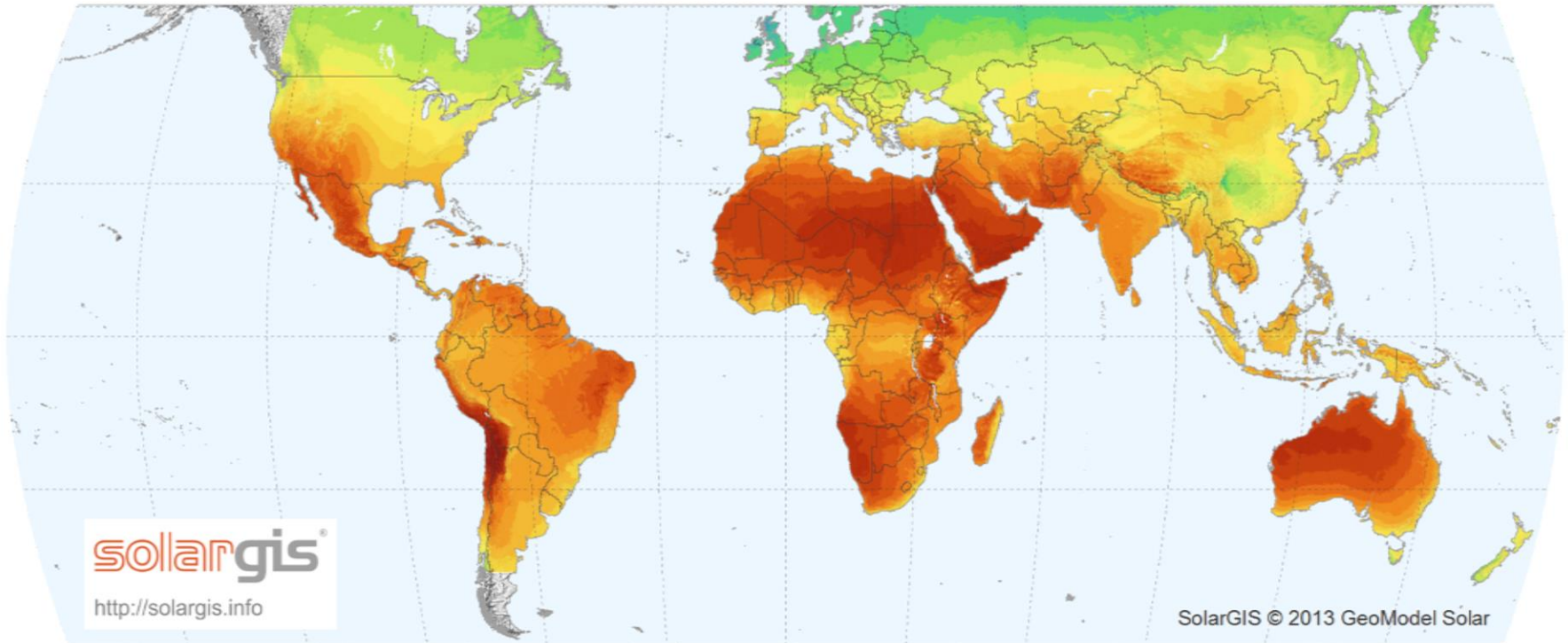
ENGINEERED
ENERGY
EFFICIENCY



Solar resource

WORLD MAP OF GLOBAL HORIZONTAL IRRADIATION

GeoModel
SOLAR



Long-term average of: Annual sum < 700 900 1100 1300 1500 1700 1900 2100 2300 2500 2700 >
Daily sum < 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 > kWh/m²



Original design specification

The proposed solar thermal system should provide at least **50%** of the annual hot water energy needs required to heat **7 000** litres of water from the inlet temperature, listed in Table 2, to **85°C**.

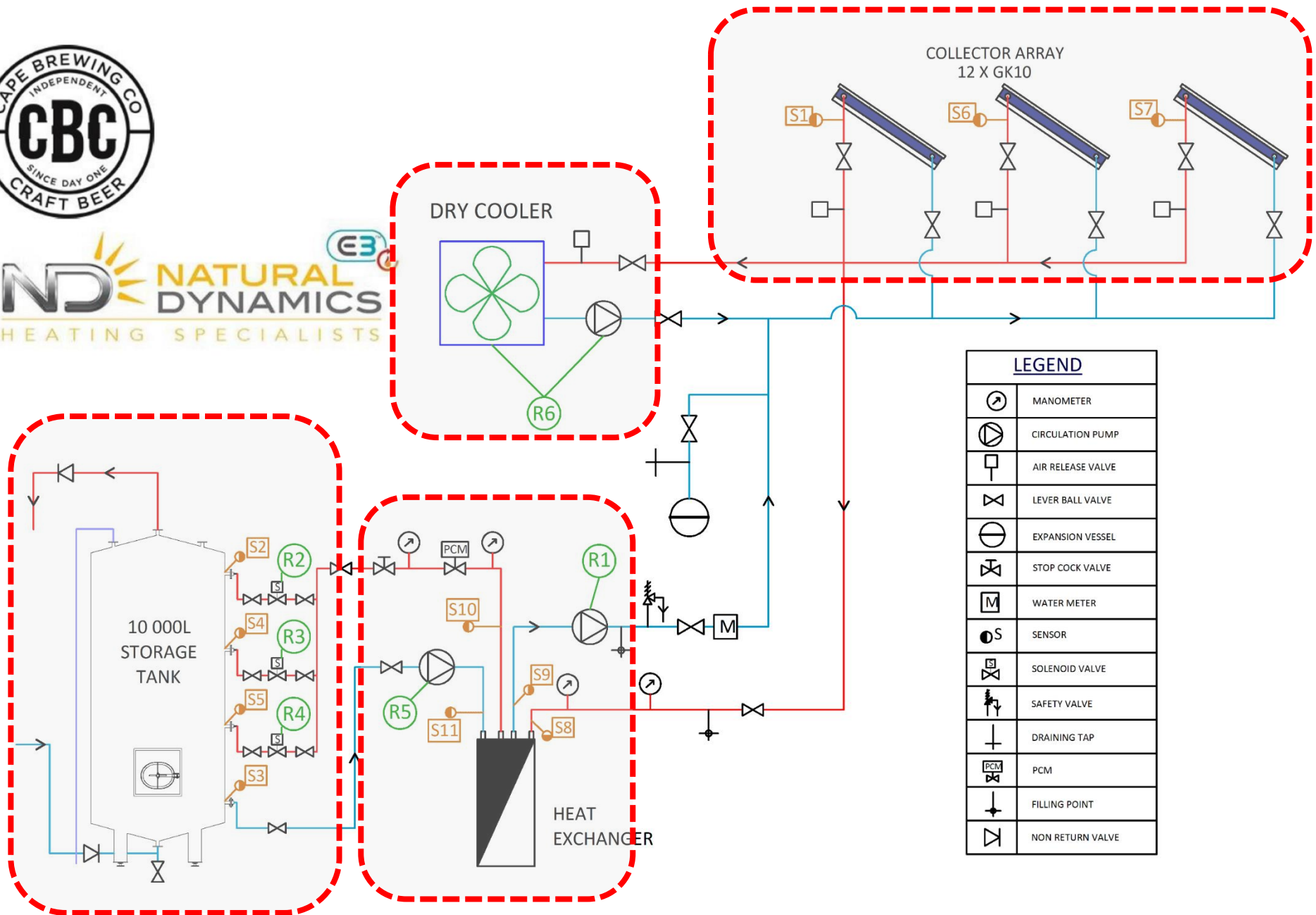
This may also be regarded as the solar fraction for the hot water storage tank:

$$f_{sol} = \frac{Q_{solar}}{Q_{need}} = 0.5$$

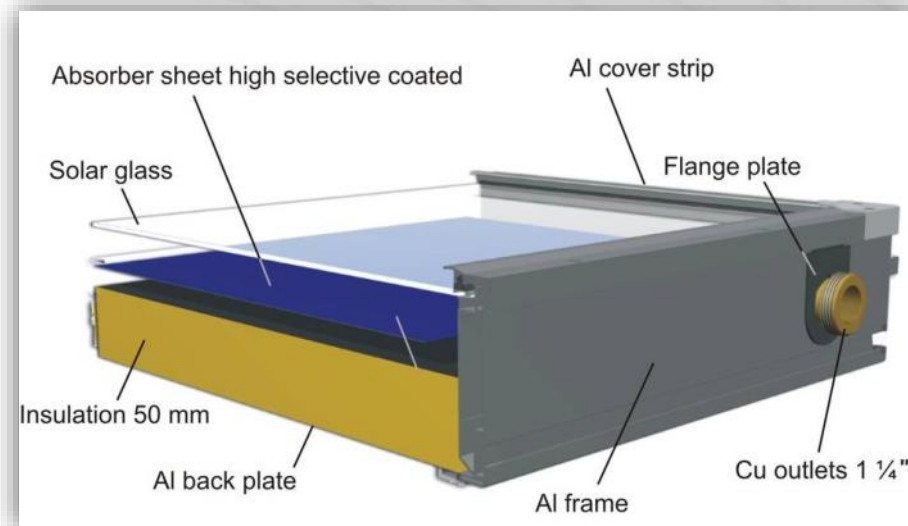


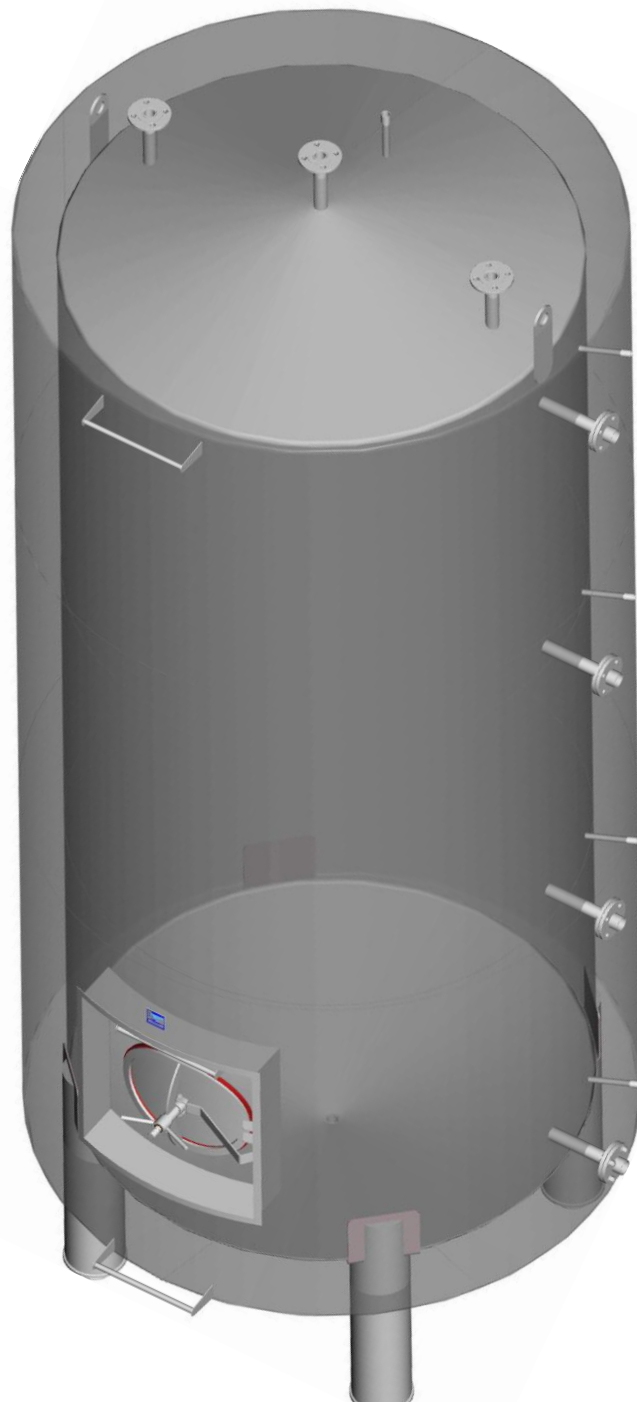


ND **NATURAL DYNAMICS**
HEATING SPECIALISTS



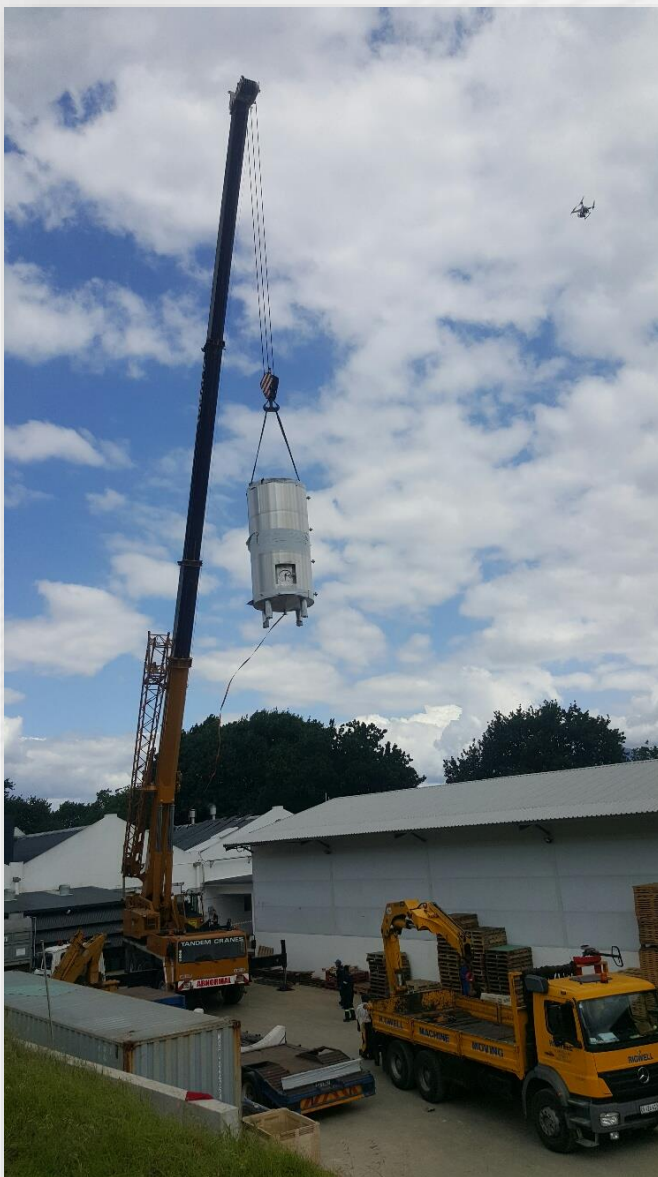
GK10 Large Scale Collector









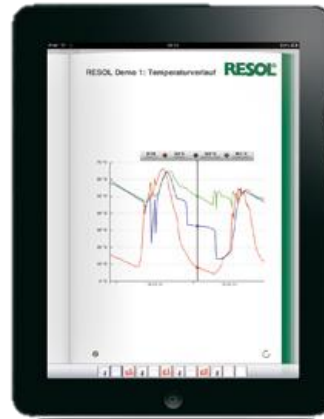


Data Logging & Visualisation



vBus →

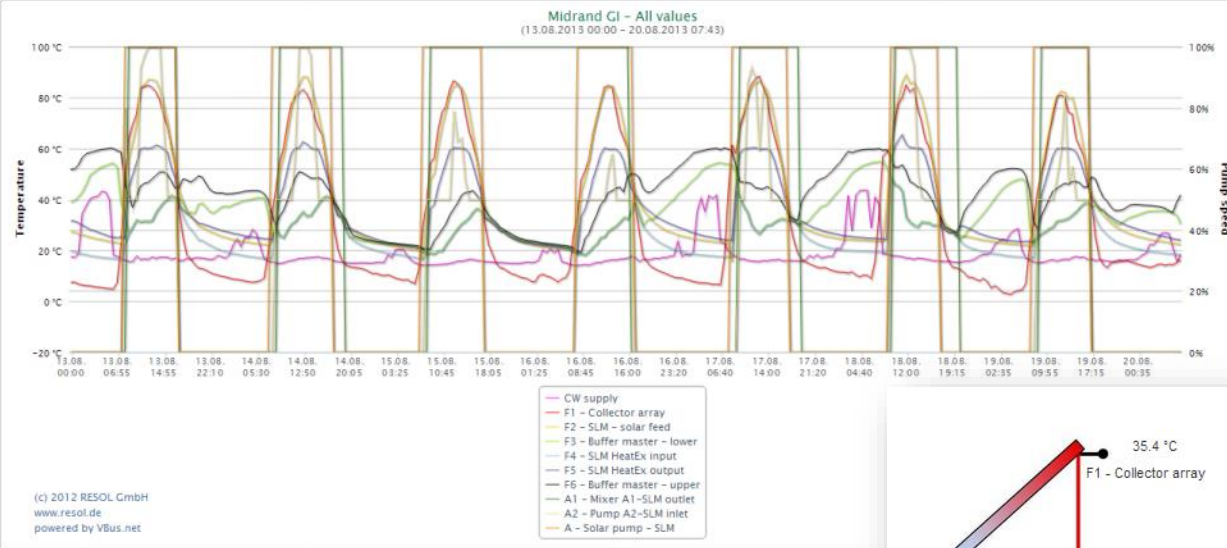
Network →



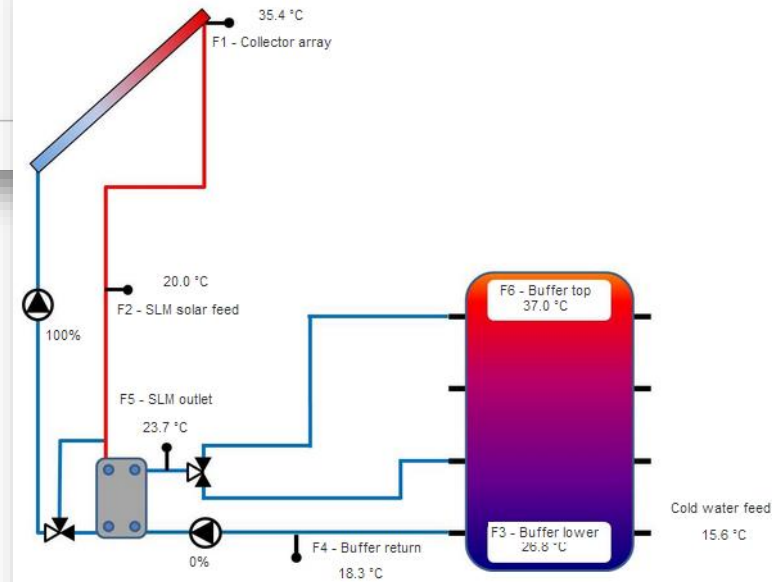
*Via
www*



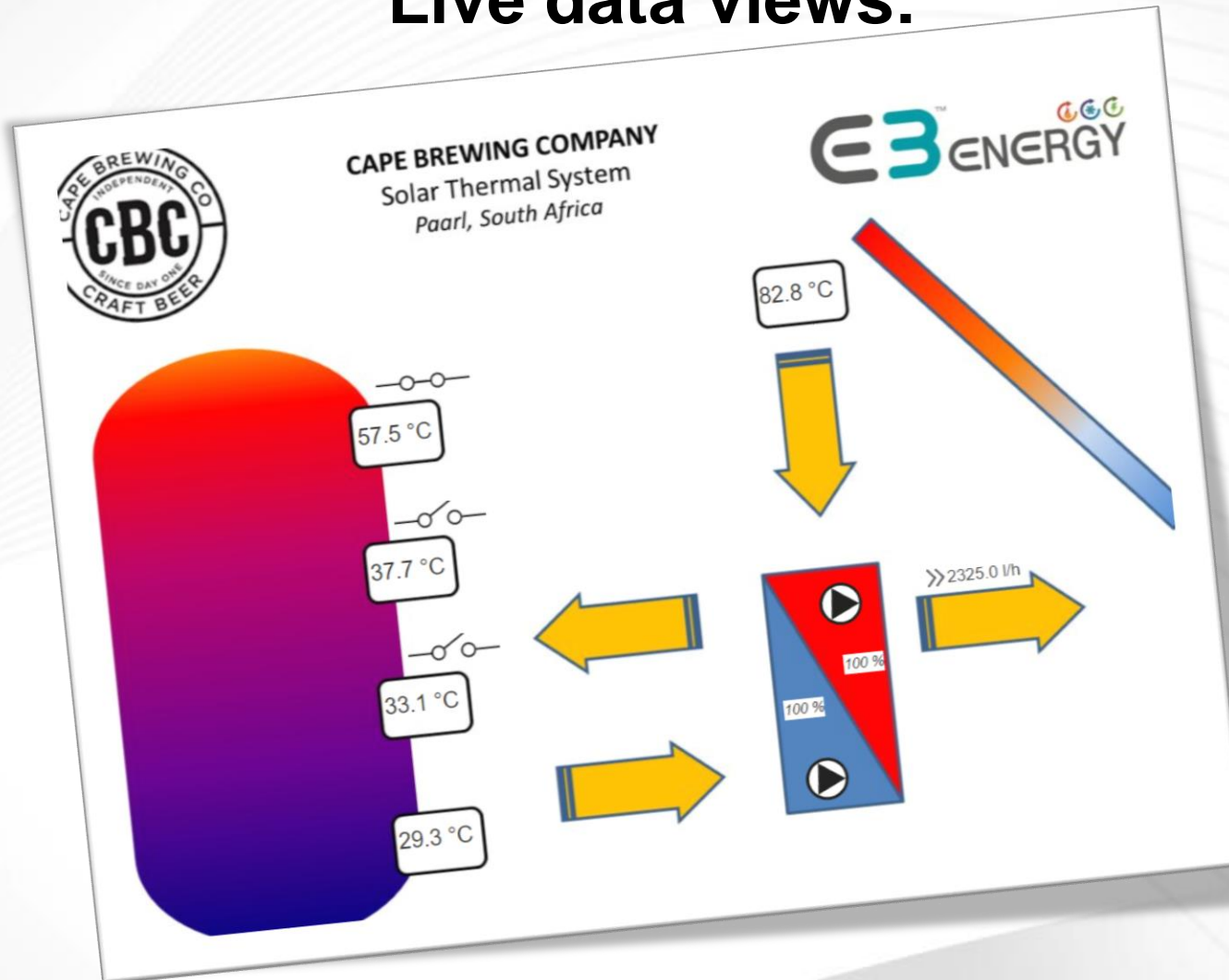
Data Logging & Visualisation



Data can be monitored in real time, using graphs and graphic displays



Live data views:



What about stagnation?

Dry coil fan assisted bypass cooler



Data Logging & Visualisation

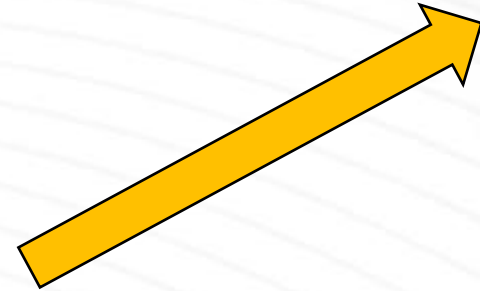


So what's the obvious benefit then....?

Solar energy remains free, for life



Paraffin fuel cost



vs.



Solar fuel cost



Further benefits

- Diversified energy, more security
- Fuel is free, forever
- No fuel storage required
- No tax?
- No delivery fee or infrastructure, labour
- Reduced run time for conventional heating:
 - Lower maintenance costs
 - Longer service life



Cheers!



ENGINEERED
ENERGY
EFFICIENCY

