SOLAR THERMAL SYSTEM DESCIPTION

DESERT ROSE HOUSE WILL UTILISE A THERMAL STORAGE HEAT EXCHANGE TANK IN CONJUNCTION WITH TRACTILE BIPV-T SOLAR TILES. THE SYSTEM SERVES TWO PURPOSES:

1. PRODUCING DOMESTIC HOT WATER BY PUMPING WATER THROUGH THE TRACTILE SOLAR TILES

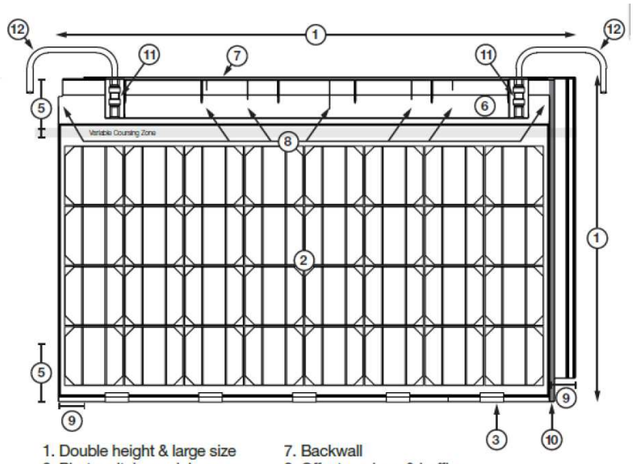
2. COOLING DOWN THE SOLAR PANELS TO AT OR BELOW THE NOMINAL OPERATING CELL TEMPERATURE TO ENSURE MAXIMUM EFFICIENCY.

THE TANK WILL UTILISE A WATER LOOP TO THE TRACTILE SOLAR TILES. WHEN THE WATER IN THE TILES INCREASES ABOVE 45°C, THE PUMP WILL START UP, CAUSING COOL WATER TO FLOW FROM THE TANK THROUGH THE TRACTILE PANELS. THIS WATER THEN RE-ENTERS THE HEAT EXCHANGE TANK AT 45-50°C HEATING THE SOURROUNDING POTABLE WATER IN THE TANK. THIS WATER IS THEN ELECTRICALLY BOOSTED BY A 2 kW HEATING ELEMENT TO 60°C WHICH IS THE SUPPLIED TO THE FIXTURES WITHIN THE HOUSE.

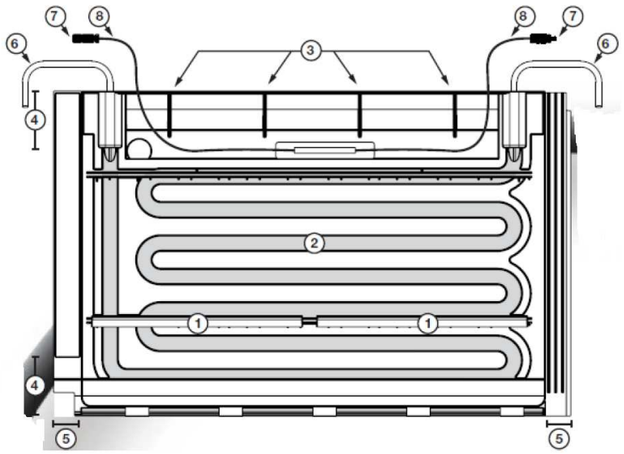
REFER TO SW-002 FOR SOLAR HOT WATER DRAWING.

ROTEX SANICUBE HEAT EXCHANGE TANK

TRACTILE SOLAR PANELS WITH IN-BUILT WATER PIPES



1. Double height & large size
2. Photovoltaic module
3. Low profile tile edge
4. Hook and batten fixing system
5. Head and tail lap zones
6. Ramp
7. Backwall
8. Offset markers & baffles
9. Side lapping
10. Silicone bead channel
11. SharkBite® push-fit connector
12. Tractile 'U' copper pipe



1. Lower hooks
2. Pipe channel
3. Support fins
4. Head and tail lap zones
5. Side lapping
6. Tractile 'U' copper pipe
7. MC4 connector
8. Cable 600mm

1 Solar Thermal Information

Desert Rose
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Client:

Dubai Electricity and Water Authority

SOLAR DECATHLON MIDDLE EAST DUBAI, UAE - 2018

AMENDMENTS				
REV.	DESCRIPTION	DATE	DRAWN	CHECK
	Updated to As-Built	14/09/18	VP	JR

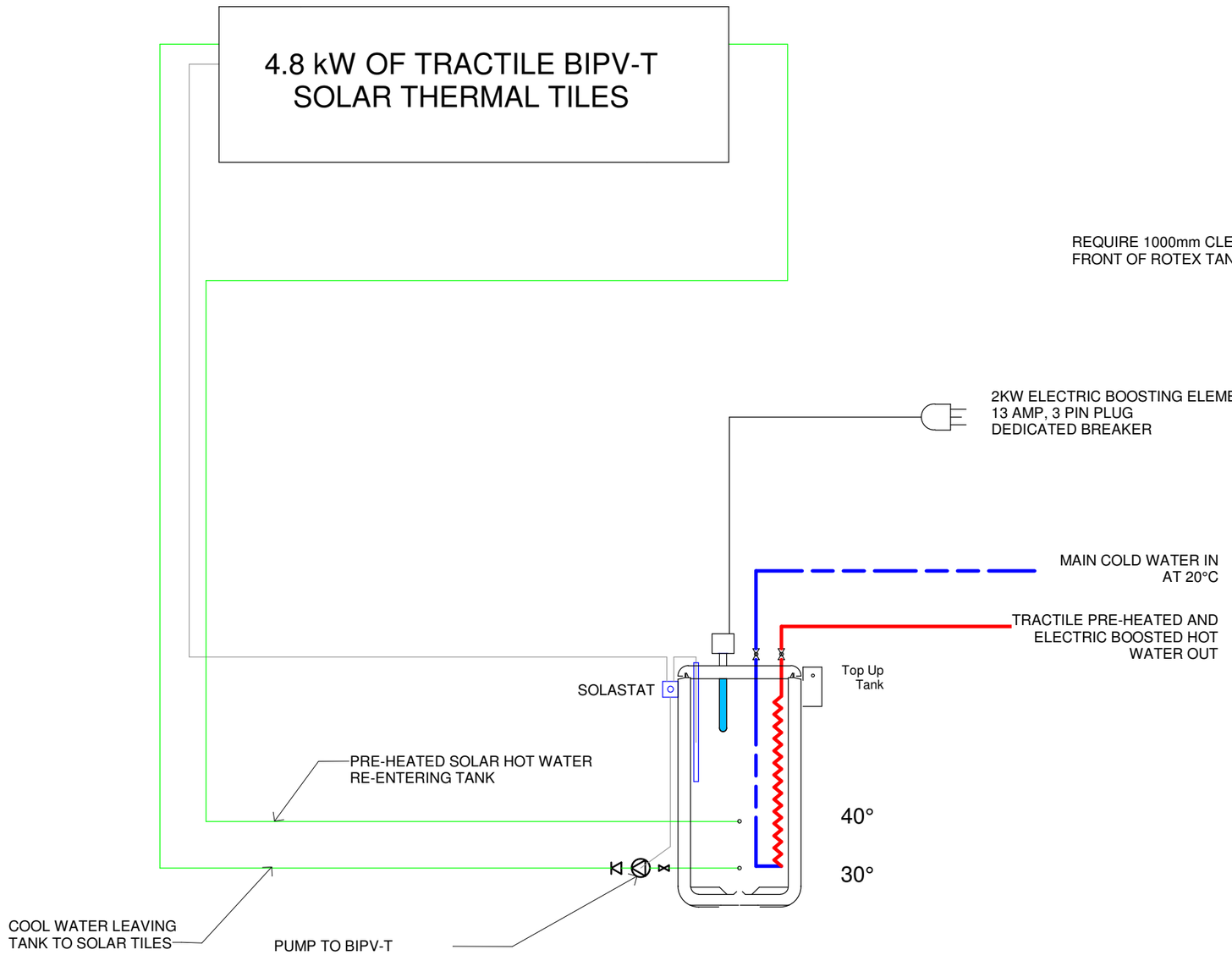
LOT	# M
DRAWER	B.BANFIELD
CHECKED	V.PHAM
DATE	09 May, 2018
SCALE	N.T.S. @ A3

SHEET: 01 OF 01

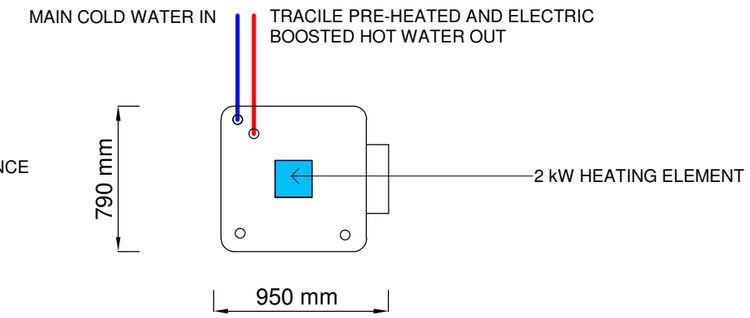
SOLAR THERMAL INFO AND DETAILS

SW-001

4.8 kW OF TRACTILE BIPV-T
SOLAR THERMAL TILES



TOP VIEW OF ROTEX TANK



SOLAR THERMAL SYSTEM COMPONENTS

1 X ROTEX 500 LITRES TANK - 1 INTERNAL COILS
1 X STAINLESS STEEL COIL FOR DHW
1 X ESW ROCS20 MYPV SHORT SOLAR ELEMENT
1X 2KW AC BACK UP, 13 AMP SINGLE PHASE
GPO PLUG IN, DEDICATED BREAKER
1 X PUMP TO SOLAR COLLECTORS
1 X SOLASTAT THERMOSTAT CONTROLLER

TRACTILE SOLAR HEATING LINE
MAIN COLD WATER LINE
DOMESTIC HOT WATER LINE
THERMOSTAT WIRING LINE

1 Solar Thermal System Schematic

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SHEET: 01 OF 01

SOLAR THERMAL SYSTEM SCHEMATIC

SW-002