VirtuHOT System Maintenance & Schedule of Inspections

The Virtu array and system should be regularly inspected to ensure correct function of the system, its components, and that no damage has occurred, for example due to severe weather or animal damage. It is important that the system is running within normal operating parameters.

The system should be maintained and checked for faults on a regular basis. If the controller registers a fault condition, an automatic alert should be sent to the engineer responsible for system maintenance, who should then address the fault issue before any damage can occur to the system. Web based performance and fault monitoring is available via the Clarity 247 monitoring package.

The following is a list of inspections and tests that should be carried out by the local maintenance team as part of an operations and maintenance (O&M) contract.

Prior to carrying out any of the actions on the O&M list, operatives must first familiarise themselves with the separate VirtuHOT installation manual, paying particular attention to the Safety information detailed in section 2. Operatives should also review the as installed hydraulic and electrical schematics, key component operational manuals/data and health and safety requirements/operating procedures associated with the installed system and installation site.

Should fault alerts be issued/identified then section 14 of the VirtuHOT installation manual should be consulted, with additional support being available from Naked Energy should this be required.

Item	Action Type & Frequency		Materials Required for Interventions
	Visual Inspection/Test	Intervention required	
System monitoring/data logging, error reporting	Visual Data Inspection to confirm continual data logging - Weekly	Contact Naked Energy	
Condition of roof mountings/fixing/ penetrations etc	Visual - 1yr	Repair as required	
Condition of tubes - presence of any damage (cracks)	Visual - 1yr	Contact Naked Energy	
Cleanliness of sun visible tube and reflector areas. These should be clean and	Cleaning - 1yr	Cleaning - 1 to 3 yrs depending on environment/performance degradation etc.	Soap/water applied with soft sponge/soft

free from dirt film, leaves, debris etc			brush, rinsed with clean water
Inspection of pipework insulation roof side/plantroom side for deterioration, damage, water ingress.	Visual - 1yr	Repair/replace as required	
Inspection of pipework, connections, fittings/valves on roof side/plantroom side for evidence of leakage	Visual - 1yr	Repair if active leaks identified.	
Open auto-Air Vent isolation valves to vent trapped air/gases, bleed pump station air separator valve(s) (where fitted)	Test - 1 yr	Repair/replace as required	
Check system fluid quality (glycol concentration and pH)	Test - Bleed sufficient (small) amount of fluid from system to undertake test - 1 yr	If results below minimum values, then system cleansing/fluid replacement required	Refractometer & Universal pH paper
Check system pressure (via controller/monitoring or physical analogue gauge)	Visual - Weekly	If result below minimum value, then fluid top-up required, expansion vessel lost gas charge, or sensors out of calibration.	Compatible system fluid of correct glycol concentration
Check function of safety PRVs	Test - 1 yr	Replace if let-by or fail test	
Check function of isolation valves (pump station & external to pump station)	Test - 1 yr	Repair/replace as required	
Check expansion vessel gas/air charge	Test - 1 yr	If result below minimum value, then re-pressurisation required.	Air compressor/pump
Check function of 3-way motorised valves (bypass/heat dump valves)	Test - 1 yr	Repair/replace as required	
Check cleanliness of heat exchanger fins and function of heat dump fan unit	Test - 1 yr	Remove algae, dirt, debris etc from heat exchanger fins. Repair/replace unit as required.	Soft brush, coil cleaner, water, air compressor as needed.
Check function/smooth	Test - 1 yr	Repair/replace as required	

running of solar system circulating pump(s)			
Check flow rate monitors (digital value from sensor/analogue value from flow setters within/external to pump station)	Test - 1 yr	If unexpected values, investigate sensors out of calibration or possible flow restrictions.	
Check function/condition of sensors & cables (temperature, flow, pressure)	Test - 1 yr	Repair/replace as required	
Check condition/location of system electrical wiring and connections	Visual - 1 yr	Repair/replace as required	
Check function of back-up immersion heater(s) (if applicable)	Test - 1 yr	Repair/replace as required	
Confirm presence/ function of DHW sanitisation system for Legionella prevention (if applicable)	Test - Weekly	Repair/replace as required	
Inspect/Check function of system controller/Datalogger	Test - 1 yr	Repair/replace as required	
Check location and condition of safety/installation labels	Visual - 1 yr	Replace as required	
Completion of maintenance/repair checklist/log & report	As work completed		