



# **RICARDO'S E-AGRIC (U) LTD**

## **SAFE WATER AND ENERGY SOLUTIONS**

Suppliers of Water Treatment Products, Water Pumps and Chemicals

Location: Wandegeya Business Shopping Centre

Tel.: +256 775 322 760 | +256 757 580 006 | +256 758 995 307

Email: [info@ricardoseagric.com](mailto:info@ricardoseagric.com) | [www.ricardoseagric.com](http://www.ricardoseagric.com)

**REF: RA/Q/LHCHS/8234**

**DATE: 25/11/2022**

Dear sir/madam,

**RE: PROPOSAL FOR BOREHOLE SURVEY, DRILLING AND INSTALLATION AT LIVING HOPE CHRISTIAN HIGH SCHOOL**

### **1.0 INTRODUCTION**

RICARDO'S E-AGRIC (U) LTD is a safe water and energy solutions company that has been in the business of borehole construction, water treatment units, maintenance, and products, solar systems, water pumps, irrigation systems, swimming pool construction and maintenance for the last six years.

### **2.0 SURVEY**

This is siting the borehole location. It is basically locating the best spot to drill the borehole that will have the best performance and water quality at the lowest cost possible.

This is will be a two (2) day process of determining the course of, and the target point reached by, a borehole, using one of several different azimuth and dip recording apparatuses. This process involves hydro-geologists who help us ensure we're not drilling into natural hazards or man-made infrastructure (pipelines, cables, phone lines, etc) making use of a variety of borehole drilling methods to assess the geophysical properties of the underlying area.

### **3.0 Drilling**

This will take one and a half (1 ½) weeks. After the borehole has been drilled, the casing and completion tasks will be implemented. This will include materials like a solid casing, screen, gravel pack, sanitary seal and a well head.

### **4.0 Installation**

This will take three (3) days. This involves installing, pump testing for 24hours and pumping borehole water for a fixed set of variables; a given time at a given rate, and then assessing the test's impact on the water level in the borehole. Maximum yield is achieved by increasing the abstraction rate, ensuring optimum drawdown of water in the borehole.

Pump testing is used to assess the volume of water the borehole can produce and the speed at which this water can be released. The kind of pumping system and piping installed will largely depend on the intended use of the borehole water. This will determine the performance of the borehole (how much water is available) and the quality of the water. Thorough testing is conducted to determine the chemical and bacterial properties of the water. This enables us to understand exactly what needs to be done to treat your water so it is not just fit for your consumption, but so that it is perfectly pure. Once everything has been finished, the borehole needs a platform and pump installed for it to be used. It depends on what the use is for the borehole to decide whether it will be hand pump, electrical pump or solar pump.

A bespoke water delivery system is then designed and installed for you, the design is based on elements such as the speed the water is released from the borehole, and the findings of the water purity testing. Your borehole may have the capability to be used as a storage reservoir, if the water release is slow the team will install a storage tank to ensure reliable water flow. The specific pump selected will be dependent on your needs for the borehole. The team will talk you through any questions and keep you up to date every step of the way.

- i. After borehole drilling and pump testing, the water will be taken for testing. (Test analysis)
- ii. The purchase of fittings (plumbing and electrical fittings) will be done and the next day installation will be started. This will take three days then the site will be handed over

## **5.0 Water treatment**

If required, your borehole water will be treated to remove any chemical, bacteriological or sediment contaminants. Often, borehole water is pure, but if water treatment is required, we will install everything needed to correct issues such as discolouration, odour, taste, pH (acidity or alkaline), dissolved solids, bacteria, metallic deposits, nitrates (particularly in agricultural areas), and water hardness. Our team will ensure that your water supply is safe.

## **6.0 Maintenance**

Prevention is better than cure! So, to ensure the optimal function of your borehole, pump and any purification systems, we recommend annual servicing. This ensures everything is running smoothly and helps preserve your borehole long-term.

## **7.0 Equipment needed**

- Solar pump
- Booster pump
- Storage tank 5000ltrs
- So safe purifier 800ltrs
- Raw water tank 20,000ltrs
- Chemical dosing pump
- Plumbing and electrical fittings

## **8.0 Protection and security**

The company is not responsible for any natural hazards that may occur i.e., fire, earthquake, heavy storms, theft etc.

Your faithfully,

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Richard Akena

Director

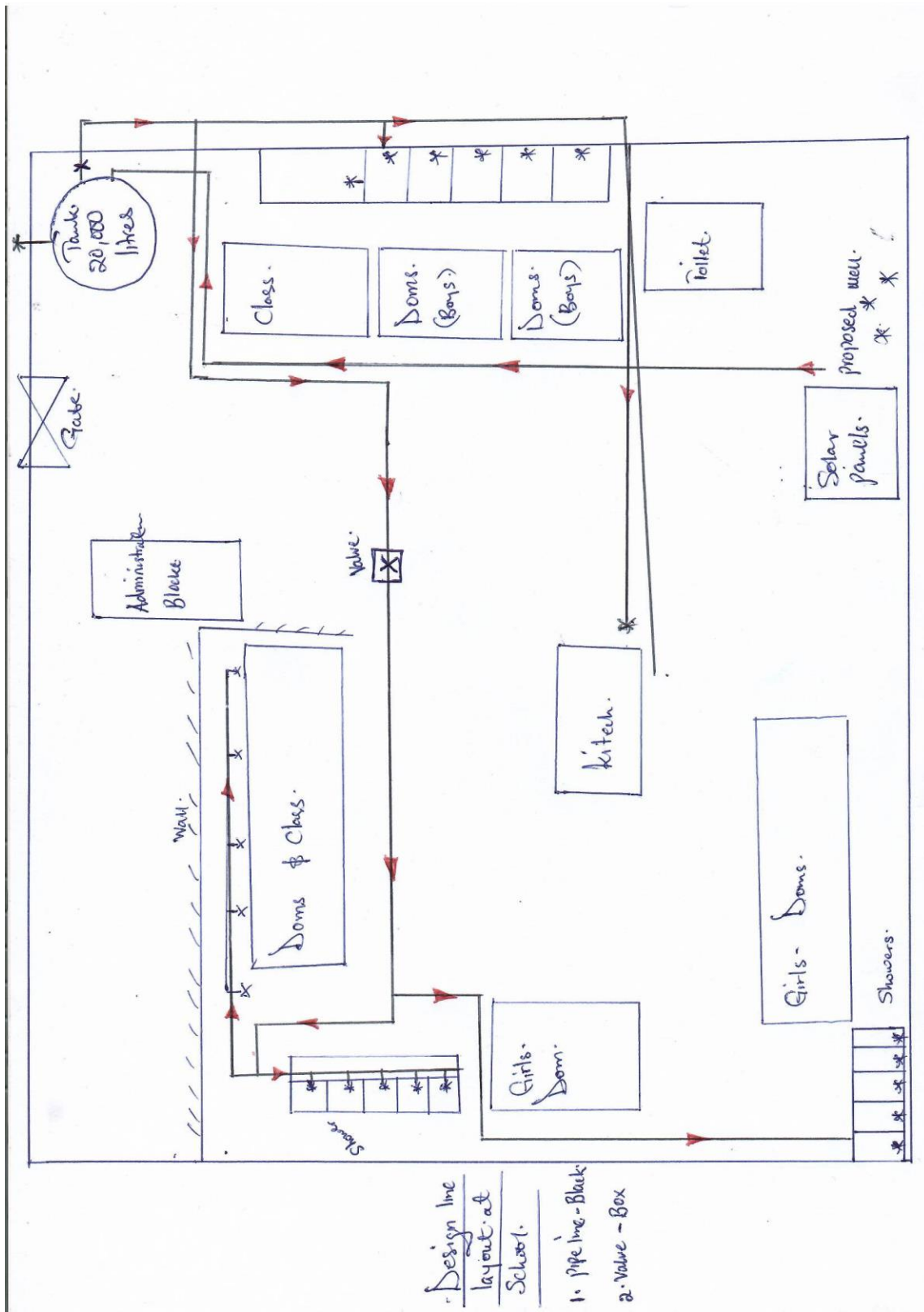
Ricardo's E-Agric (u) Ltd



Solar pump



**Lay out (solar pumping)**



- Design line layout at School.  
 1. Pipe line - Black  
 2. Valve - Box