

Client Name: Winder Controls (Pty) Ltd

Project Value: R1 237 000-00 (incl. VAT)

Project Duration: November 2019 – September 2021

Location: Limpopo, South Africa

Project Description: Re-Solve conducted Water and Sanitation upgrade interventions at rural schools within the Blouberg region of the Limpopo province in partial fulfilment of the Client's Corporate Social Investment requirements. Re-Solve initially conducted assessments at 20 schools within the region to gain a better understanding of the requirements and limitations of each school. Although all schools showed to lack significant infrastructure and resources, a ranking system was developed based on their need for urgent intervention. From this ranking system and with the available budget, five schools were targeted for interventions.

1. Pre-Intervention State

Schools within the Blouberg area operate under stressed conditions with prevalent deteriorating of water infrastructure, water scarcity and a lack of any significant resources available to them. The assessment showed that:

- 90% of schools operate with intermittent municipal water supply and can experience periods of up to two weeks without receiving water.
- Sanitation infrastructure is severely stressed with 55% of schools operating with pit latrines.
- Significant food shortages leave learners vulnerable to malnutrition which is not conducive to an environment of effective learning. 50% of schools showed attempts to grow their own vegetables and fruit, often with low success rates.
- High levels of theft and vandalism was noted at 35% of schools with minor levels shown at majority of schools. Pumps were often missing where boreholes had previously been drilled.
- JoJo tanks previously installed for rainwater harvesting were found to be empty owing to lack of significant rainfall events.

2. Proposed Solution

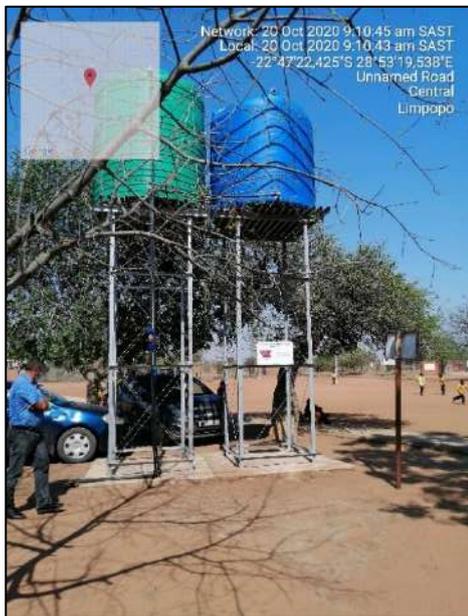
- **Installation of Elevated JoJo Tanks** – A total of nine elevated JoJo tanks, with steel stands and reinforced concrete bases, were installed to increase water storage capacity. This approach alleviates stresses on schools during periods of intermittent supply.
- **Construction and/or Refurbishment of Sanitation Infrastructure** – A new Enviro Loo toilet block was constructed to alleviate pressure on existing sanitation infrastructure. A total of 28 toilets were refurbished and brought to working condition with the main aim of imploring safe and hygienic use of the systems, especially during the current Covid-19 pandemic. All toilets were waterproofed to prevent seepage, components (cover plates, extraction units, wind masters, etc.) brought to good working condition, and lathered with Jeyes Fluid, thus significantly increasing the lifespan of the existing infrastructure. Training of staff and relevant stakeholders was provided to increase expected lifespan of the infrastructure.
- **Borehole Drilling** – A borehole was drilled and equipped to limit reliance on municipal water supply. The borehole was fitted with a

submersible pump with run-dry protection and locked up to safeguard it against theft.

- **Vegetable Garden Installations** – Vegetables (cabbage, spinach, beetroot) and fruit bearing trees (Avocado, Naartjie, Orange) were planted at five schools to increase food capacity. Shade netting was installed to protect vegetables against harsh weather conditions. Drip irrigation (fed by installed JoJo tanks) was installed to increase ease at which maintenance staff could water planted flora.

- **Re-Routing Networks** – Water networks were adapted to increase the availability of water supplied through the school. This would limit the amount of effort required by students and staff to fetch water and promotes an environment conducive to hand washing and good hygiene.

- **Tap Stand and Basin Installations** – A total of 29 taps were installed in areas of high foot traffic. This made it convenient for drinking, handwashing, and cooking. Additionally, concrete basins were installed near kitchenette areas to allow for efficient food preparation.



Installed tank stands with reinforced concrete bases



Construction of an Enviro Loo Toilet Block



Before and after photographs of refurbished Enviro Loo Systems and training provided



Borehole Drilling



Vegetable garden installation

3. Post-Intervention State

Community leaders were consulted throughout the project to ensure that all implemented interventions make a positive and impactful difference in the lives of the community, staff and learners. For this reason, unique solutions were proposed and accepted by the Client for each school based on their requirements. Site visits have since been conducted and it was found that, in general, schools were able to extend the vegetable gardens, JoJo Tanks were full and thus, adequate water supply was made available to the learners and staff members. Toilets were kept clean and a clear sign of ownership was taken by the schools.

4. Outcome Achieved

The following key outcomes were achieved:

- Adequate water storage was provided to increase the likelihood of water availability, even in periods of no municipal supply.
- Refurbished toilets which were previously avoided, owing to odour, are now in use.
- Constructed toilets have decreased pressure on existing infrastructure.
- Expected lifespan of infrastructure has increased due to training and best practise maintenance methods shown through training.
- Installed taps were seen to be used by all stakeholders for drinking, handwashing, and cooking.
- Vegetable gardens have proven vital in providing a self-sustainable solution to assist in mitigating food shortages.