CORPORATE SOCIAL UPLIFTMENT:
GIRLS & BOYS TOWN
Case Study

Client Name: Girls and Boys Town

Project Value: R131 019-79 (incl. VAT)

Project Duration: February 2021 – July 2021

Location: Gauteng, South Africa

Project Description: Re-Solve was appointed by Girls and Boys Town to assist with reducing their overall water consumption at their Magaliesburg campus, as they had been receiving exorbitant monthly municipal water bills. The campus is over 70 years old, and money had been spent to upgrade the infrastructure, however, frequent leaks and pipe bursts were still a common occurrence. As part of Re-Solve's Corporate Social Responsibility, a discount of R50 000 was provided to Girls and Boys Town on the cost of the work to be undertaken.

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1. Pre-Intervention State

Following a site investigation, it was noted that:

- The campus had a borehole which was not in use, owing to the lack of maintenance and refurbishment.
- The campus had a water treatment plant, but it had since been decommissioned.
- Re-Solve replaced an existing 20mm water meter with a 40mm water meter to enable flow logging to be conducted on the meter.
- The flow logging results showed that the average flow was 0.99kl/hr.
- Instantaneous pressures were taken at the high point, mid-point and low point according to the campus elevations, and the results were 6.5Bar, 7.2Bar and 7.9Bar for the respective points.

2. Proposed Solutions

- Installation of a new Pressure Reducing Valve – Installing a new 50mm diameter pressure reducing valve to reduce the remarkably high pressure at the campus to acceptable pressure levels. An instantaneous pressure test taken at the high/critical point revealed that the pressure was 6.5Bar and this was where pressure was expected to be lowest. The proposed PRV would reduce the 6.5Bar at the critical point to 2.5 – 4Bar depending on the requirements.
- **Leak detection and repairing of leaks** – This followed the installation of the PRV to ensure that no further pipe bursts or leaks occur, after the water pressure has been reduced. This phase was completed through visible leak detection and all the leaks found were repaired
- **Refurbishment of the existing borehole** – The borehole on the campus needed to be refurbished so it could supplement the municipal water supply, and this would reduce the water bill. The scope of work included the installation of a new borehole pump, replacement of electrical cables and isolators, and the replacement of the borehole cover.
- **Treatment of borehole water** – Repurposing of an existing water treatment plant to allow for it to treat the borehole water. The treatment plant had been previously decommissioned, and the plant's refurbishment would depend on what water quality parameters it would need to treat.

Newly built PRV chamber

Repaired urinal

Newly installed 20mm sub-meter

Repaired Toilet cistern

3. Post-Intervention State

In addition to the PRV installed and leakages repaired, 20mm diameter sub-meters were installed at various locations within the campus. These sub-meters assist campus management to accurately track the consumption of each building and ensures that the area supplied by each sub-meter can be isolated. The Re-Solve team installed a check meter and installed a real-time GSM logger on the meter. The GSM logger transmits water consumption data to a cloud-based platform where it can be stored and accessed remotely. The refurbishment of the water treatment plant was not included in the final approved scope

4. Outcomes Achieved

The following key outcomes were achieved:

- Installation of a new 50mm Pressure Reducing Valve, water meter, strainer, and isolation valve. The PRV was set to reduce the incoming water pressure from 16Bar to 3Bar.
- Visual leak detection and repairing of leakages identified from toilets, urinals, and taps.
- Installation of a check meter, sub-meters, and a GSM logger to record water consumption for the whole campus and at various locations within the campus.
- Refurbishment of the existing borehole involving the installation of a new borehole pump and motor, a new borehole cover, new electrical cabling, and isolators.