



TECHNOLOGICAL PLUMBING SOLUTION
Innovative solutions that add value



Technological Plumbing solutions Profile Prev leak Project story

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EXECUTIVE SUMMARY

Technological Plumbing Solutions (TPS) is a township based social startup armed with a team that has over 10 years plumbing experience. TPS provides clients an affordable, easy and effective IOT solution to solve water leaks and sewer blockages. Using IOT, we identify the problem at source and automate the response before blockages can overflow wreaking havoc on your business infrastructure disrupting daily operations.

Our products are globally recognized and have been endorsed by the Technological Innovation Agency (TIA), The Innovation Hub, Chivas venture RSA 2020, United Nations sustainable development solutions Network (SDSN) as one of the top 50 youth solutions addressing the Sustainable development goals <https://twitter.com/SDSNYouth/status/1177222827327524864/photo/1> and the Youth Globalization Awareness Program (YGAP) in South Africa and Recently accepted by GOOGLE SDG program.

The Innovation

TPS offers a ground breaking IOT solution called **Prev Leak smart polymer manhole covers + our progressive web app**. Our model was piloted in a number of clients in the community of Zola.

The Goal of this is:

- 1.To empower clients with the digital tools and smart early detection systems to ward off blocked sewers and improve reporting of water leaks to save water and keep our environment clean from sewer pollution.
- 2.Improve the quality-of-service delivery by automating the response.
- 3.Generation of data to help identify potential “hot-spots” for better planning.
5. Has locking mechanism and tracking system to prevent theft of manhole covers for the Schools.

History

In 2019 we piloted a project using our 1st prototype sensor and Held a meeting with the Zola community who through a contribution scheme employed 3 locals as service men to received sms and email notification of blocked sewer where prev leak was installed.

Recent accolades

We won the CPSI Ministerial award 2020 after applying for the community innovation category. Link <https://t.co/IHWWMPVy6i?amp=1>

The Project

Pictured below is our 1st prototype we used to pilot in 2019



The company has designed a device called “Prev leak” to detect and report blockages via sms and email. Adopted as a Community project, Prev Leak allows locals to be early informed of any blockages within their area after which, locals can then self-respond before sewer starts to overflow. This reduces the occurrence of spills into residential areas and water bodies.

Our mission

to introduce impactful water loss and wastewater preventive Solution that incorporate quick artisan response for public and private sector, to empower clients and communities.

Vision

To introduce unique environmental conservation technologies and services that are Impactful for households and industries.

The Prev Leak device was mounted using screws on the side wall of each manhole, and the wired sensors were installed approximately 2 metres down a sewer manhole. The device detected sewage build-up using a wired water sensor. The sensor then was triggered when water levels reach a predefined level, indicating a blockage.

Powered by a GSM (Global System for Mobile Communication), the device sent out an sms and email notification to TPS and locals tasked to unblock sewer manholes in their community.



This allowed locals to respond self-unblocking sewage manholes before they can overflow.

It takes 1 hour 46 minutes before any blocked sewer can start to overflow. This gave locals enough time to arrive, open the sewer manhole and unblock before an overflow occurs.

Solving the problem

The most valuable aspect of this project was that the community of Zola were able to solve their own problems of sewage blockages using technology and came together by contributing money to hire locals who responded to unblock sewer lines before they can overflow.

1. This limited human contact with sewer because locals always arrived whilst the blocked sewer was still in containment.
2. Limited pollution of overflowing sewer that brought health risk and contamination of water sources.

The objective achieved

- Created semi PART TIME employment
- Community adopted technology to solve issues
- Collective contribution resulted in social cohesion
- Solution that limited human contact with sewage as a result of early detection prompting early respond before it can overflow.

The Zola community used technology to detect blockages and hired locals to unblock before it can overflow efficiently and in a fraction of the time city agencies and plumbing contractors can respond.

On average, locals were able to unblock sewer in less than 40 minutes.

On the whole, Prev Leak provides a better and more cost-efficient way to the wastewater management needs of its clients.

Founded by Thulani Khumalo in 2016, and operating from Soweto, Johannesburg, Technological Plumbing Solutions (TPS) is a township-based, for profit artisan social enterprise that addresses sewage overflows which brings with it pollution and contamination of water sources in residential areas, b2b premises and venues with high traffic volumes.

VALUE PROPOSITION

Prev Leak activities are directly addressing SDG indicator 11, improved water source, piped % of urban population with access. The project positively contributes to this indicator by preventing raw sewage from overflowing into residential areas and the environment.



HOW TPS HELPS

TPS engages with local municipalities, town councils and corporates offering a monitoring system combined with specialized fixed hardware to analyse, collect data and transmit notifications on a daily basis. This enables TPS to help clients to prevent sewer and water leaks malfunctions from disrupting their normal business day.

FOUNDERS

Thulani Khumalo

Director

Thulani was born and is based in Soweto. After completing school, he acquired a Certificate in Marketing through the University of British Columbia. Thulani has had vast experience in the plumbing industry and was contracted to head up an installation team, to install smart meters in Johannesburg.

Below is project images and award

Status: Received



Sewage Blockage 27/01/2021 10:58
8784 Mapoele St,
Dobsonville, Soweto,
1863, South Africa

Sewage blocked

Status: Received



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Gauteng

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*for contributing to the promotion of
a Culture and Practice of Innovation*

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Hon Senzo Mchunu, MP
Minister for the Public Service and Administration
26 February 2021





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