

## Disused Infrastructure

**Issue:** Old infrastructure installed in Kenya in the 1950s by the British were once good facilities but now lie disused and abandoned due to lack of knowledge regarding maintenance and repair. In the village of Tot, two cisterns had been designed and installed to collect groundwater from a spring but no one knew how it was constructed below ground. The cisterns were full yet no water was flowing into/out of them. Water from the spring was bypassing the cisterns, creating a wetland with vegetation growing – an ideal environment for mosquito breeding, leading to malaria health concerns.

Upon excavating the accumulated silt from around the spring area and the cisterns it was possible to understand the collection and storage design. The cisterns were drained, cleaned out and sanitized. The outflow of the lower cistern was connected with a series of pipes that gravity-fed the water to a tap about 500 m away so that people in a village could access it.

**Solutions:** Graduates from the MSc program learn about typical designs for groundwater spring protection and construction; they learn the health concerns related to standing water and contamination of surface water by people/animal defecation, and the need to keep groundwater isolated from the ground surface to retain its purity from bacterial pathogens; they will learn how to design gravity-fed distribution systems.

