

ASSESSMENT OF THE WATER USE EFFICIENCY AT NUST

FINAL YEAR PROJECT

BY

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ABSTRACT

The City of Bulawayo has for a long time been faced with water scarcity challenges. Supply management efforts like exploration of new sources and water rationing, which is currently being effected by the city council have not been able to solve this problem, making it a necessity for every consumer in the city to play their role in managing their water demand instead. The National University of Science and Technology (NUST), being a highly respected institution which educates and trains tomorrows' leaders and thinkers sustainable solutions to problems, was chosen as the study area because an insight of water conservation measures being implemented by NUST could be used as a role model to other institutions in society.

The main objective of the project was to assess the water use efficiency at the NUST.

A walk-through audit was carried out to monitor all water-using facilities and determine the efficiency of water use within these facilities. A survey was also carried out to determine the water use patterns so as to identify water-saving opportunities around the campus. Questionnaires were administered to both staff members and students for this purpose and also various observations and face to face interviews were carried out around the campus. Water consumption records from Bulawayo City Council (BCC) archives were used to determine the average monthly consumption, thus determining the water demand at NUST.

It was observed that water is not being used efficiently and that there is no means of accounting for water use as the only meter on campus (bulk meter) is faulty. The average daily consumption was found to be about 252.64 KL which is over 3 times the stipulated 70.767 KL daily water rationing limit by the city council and also, among other water losses and wastages around the campus, the urinals with the continuous flush and fill mechanism were found to be the major cause of concern, wasting over 158.4KL of water per day. It was found out that females generally use more water than males and that staff members use more water than students. It was also noted that at the laboratories, canteens and at the students' residence there is a tendency to use a lot of running water for various purposes.

It can be concluded that water is not being used efficiently at NUST.