

## **ABSTRACT**

Pervious concrete is a type of light-weight concrete made by omitting fine aggregate in design and batching. This makes a concrete with large, continuous and interconnected pore-system in the concrete, through which water is conducted. The pervious concrete made is lighter, less dense, less strong, more porous and more permeable than the conventional concrete. It is thus ideal for managing storm water.

In this research, an ideal mix formula was sought with acceptable characteristics to use in drainage channels to manage storm water in urban centers, while also recharging the town's constrained aquifers. The ratio found most ideal was 3:1:0.375 for aggregates, cement and water respectively. The pervious concrete made had a density of 1999.4 Kg/m<sup>3</sup> and average compressive strength of 18.63N/mm<sup>2</sup>. On the other hand, it had an average porosity of 23.84% with seepage rate or permeability of 0.0102l/s. The pervious concrete mix design obtained was thus able to strike a compromise and obtain optimal values between strength and porosity which are equally paramount yet have inverse relationship.

In terms of addressing the devastating state of many town's storm water, laboratory results showed that 34.72% of the storm water in drainage channels, could be seeped to the ground below the drainage if they were made of pervious concrete. This would ease the effects of flooding in the city and also recharge aquifer to serve boreholes. The pervious concrete made, was also found to have stiff consistency which is advantageous in placing since it would not segregate if dropped from higher height.