

**ROOT CAUSES FOR THE FAILURES OF EXISTING
SEWERAGE SYSTEM IN COLOMBO MUNICIPAL
COUNCIL AREA**

Loku Bogahawattage Kumudu Lal
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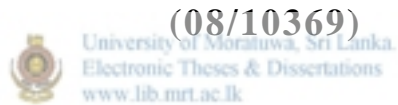
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Thesis submitted in partial fulfillment of the requirements for the degree
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Sri Lanka

February 2013

DECLARATION

A Study Submitted In Partial Fulfillment of the Requirements of the Degree of Master of Science in Environmental Engineering & Management

I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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The above candidate has carried out research for the Masters Thesis under my supervision.

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Signature of the supervisor:
Prof. (Mrs.) Niranjanie Ratnayake

.....
Date

ABSTRACT

The ageing Colombo Sewerage system has been deteriorating over the years and the system was unable to cater to the increased demand and led to many environmental issues. Therefore, certain improvements were carried out in the last 3 decades to address the prevailed issues. But, sewer pipeline stoppages and collapses were increasing gradually with the dilapidated condition of the system, even with the newly introduced improvements. Collapses, blocks and chokes are experienced regularly in the system. This has led to overflows and short-circuiting which has caused serious pollution in water bodies and the environment as a whole. As most of the major collapses and overflows had not been attended to and not been given necessary priority due to various constraints, the situation became critical day by day, so that life styles of the public have been badly affected.

Though a few studies have been conducted to develop the existing sewerage system in Sri Lanka by various non government organizations, the expectations were not achieved successfully and some issues still remain. Only a few recommendations of these researches were implemented. Therefore, it is vital to identify the issues in the existing Sewerage Systems in Colombo Municipal Area, to improve it into a smooth running, environmental friendly sewerage system. Thus, there is a need to conduct a research to explore the root causes for the failures of the existing sewerage system.

The case study research approach was used to investigate the research problem, by interviewing key stakeholders, including the Engineers, within a selected administrative district. Further, a questionnaire survey was carried out among the other five administrative districts in the CMC areas to observe whether the identified root causes through the case study are similar and common to the other districts too.

This study revealed that there are several types of failures in the existing sewerage system. The related root causes for the failures were further disclosed after evaluating the common reasons for the failures. Furthermore, it was observed that the root causes for the failures are common and acceptable to the entire sewerage system in CMC area through the survey. Further it is recognized that these root causes are generated in all three stages; design, construction and maintenance. Finally, good practices to improve the existing sewerage system are also explored through this study.

Key words: Root causes, Failures, Sewerage system, Colombo Municipal Council

Dedication.....

To all who assist me

I see

The whole world

Around me

Through your help

So,

This may be simple

But,

It is dedicated for you



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