

**IMPORTANCE OF DETAILED CONSIDERATION OF
CONSTRUCTION SEQUENCE IN INSTALLATION OF
RETAINING WALLS WITH EXCAVATION:**

A CASE STUDY

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**IMPORTANCE OF DETAILED CONSIDERATION OF
CONSTRUCTION SEQUENCE IN INSTALLATION OF
RETAINING WALL WITH EXCAVATION:
A CASE STUDY**

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DECLARATION

I, the undersigned P.G. Deepika Chathurangani hereby declare that I am the sole author of this thesis. To the best of my knowledge this thesis contains no material previously published by any other person except where due acknowledgement has been made. This thesis contains no material which has been accepted as part of the requirements of any other academic degree or non-degree program, in English or in any other language.

This is a true copy of the thesis, including final revisions.

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ABSTRACT

Earth retaining structures are a key component in most engineering constructions. The present design practice as per the standard procedure is limited to analysis the structure under anticipated permanent design loads. However, in reality, the structure undergoes numerous loading patterns depending on the construction methodology as well as construction sequence that might be vary in type, magnitude, direction and distribution to that of design loads. The recent construction experience of some projects in Colombo indicates that these unaccounted loading patterns in construction stages could lead to failure modes that were not expected during design phase. In this study, a detailed forensic analysis is carried out for one case study by means of numerical modeling of different loadings undergone during various stages of the construction stage and root cause of failure for each case is identified. A gap analysis is carried out to ascertain that why the root causes had not been taken in to consideration during the design phase and recommendations are proposed to the design procedure currently practiced to avoid future such consequences.

Key Words – Construction Sequence

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