ABSTRACT

Underground development in the form of shopping malls is getting popular in the recent years; we may even expect underground residences in the near future. This inevitably calls for research into methods of resisting flotation in underground structures.

Little has been done on this area of study in the local scene because the substructure is almost always demolished with the superstructure. It is very seldom that the underground structure is left to stand alone to counteract forces of buoyancy. Nevertheless, the existence and potential effects of flotation should not be neglected.

This study reports on the possible use of the drainage blanket as a pressure relief system. A detailed case study is brought in to provide an insight on the common methods used to resist upthrust and the technical details of the drainage blanket. A cost comparison using life cycle costing provided essential findings: that the drainage blanket has a higher Net Present Value (NPV) than other measures and should therefore be selected as the prime pressure relief measure.

Key words:
Drainage Blanket
Flotation
Pressure Relief
Upthrust