

**THE RESPONSE OF CONVENTIONAL STRUCTURES  
IN SRI LANKA TO ADVERSE FORCES OF NATURE**

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## **ABSTRACT**

With the experience of minor earthquakes in different areas in Sri Lanka recent times, structural adequacy of existing structures has been questioned. Since a lot of research has already been carried out on buildings in relation to their behavior in seismic loads, this research focuses on special structures such as "Kalutara Dagaba", Dagaba at Colombo port and Elevated water towers.

Due to unavailability of required data for detailed analysis of first two structures this study has mainly concentrated on elevated water towers. Since the "Intze" type is the most common type of the water tower for more than 500m<sup>3</sup> capacities, the scope of this study has further reduced to study of "Intel" type water towers.

Since the effect of wind as well as earth quake would be acting horizontally; there is a general belief among the engineers that those structures designed to resist wind forces can withstand minor earth quakes as well.

In this background, this study has concentrated on the impact of wind and earthquakes on "Intze" type water towers of different capacities. Analysis shows that existing water towers which have been designed for wind loads are not adequately strong for resisting earthquakes. It is hoped that this study will shed light on some structural deficiencies available in existing structures with respect to lateral loads of dynamic nature.