

Underground Metro Projects-Structural Engineering Challenges

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Abstract

The most dramatic development in the field of urban infrastructure in recent times has undoubtedly been the introduction of the metro as a transportation system in many cities across India. Apart from providing the predominant mode of travel, the metro has been instrumental in reducing pollution and making a significant contribution to the improvement of quality of life for the citizens.

In the urban environment underground construction is always preferable instead of the alternative of employing elevated viaducts that would eventually remain a permanent part of the city's skyline, resulting the severe restrictions on planning for developments in the future.

This paper discusses the challenges experienced during the design and construction of underground structures for the Metro constructions in some of the heavily built-up areas in cities where the authors' company has worked. Some typical situations encountered and the engineering solutions that were evolved will be discussed in this Paper.

Keywords: *Secant Pile; Guide wall; Tunnel; Underground Metro; Concrete Decking; Trench cutter; Struts; Rock Anchors; Temporary utility.*