

Abstract

Title: Geotechnical Design and Control in BAM Civil

Sub Title: A Qualitative Study of Geotechnical Design and Control within BAM Civil in Ireland and the Feasibility of Developing Internal Design Capabilities related to Geotechnical Engineering

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Purpose: A key influence of all civil engineering projects is the geological conditions that are naturally present within the confines of the project and often determine the success of a particular project. The purpose of this paper is to analyse BAM's current strategy regarding geotechnical design and management and to investigate the feasibility of establishing an internal geotechnical design function to manage these geological conditions.

Methodology: Current corporate strategy and the merits of developing an in-house geotechnical department within BAM in Ireland were researched by interviewing a selection of BAM personnel and related colleagues. Using the current and past project experiences of these participants and contractual developments, this research discusses the development of such a department. A comprehensive literature review which underpinned the research findings was also carried out.

Findings and Recommendations: This research highlighted the importance of geotechnical design and control as a key component in the tendering and successful completion of all civil engineering projects. However BAM at present rely on the competency of their designers to control this with varying success. The research highlighted the lack of geotechnical design knowledge within BAM leading to over design in certain circumstances with obvious increase in cost and programme implications. The absence of temporary works design and monitoring also became apparent due to design cost with obvious safety issues and company reputation risks. The setting up of a small department of experts was deemed viable but a full design office function was not due to workload. The establishment of a geotechnical database to collate information and proven solutions was deemed viable following this research. Existing Bam intranets were deemed suitable to cater for this. It was also concluded that Bam designers would be looking harder at their designs if they knew there was another department checking them rather than the carte blanche that exists at the moment in certain situations.

Keywords : geotechnical design, corporate strategy, cost effectiveness, design selection