

GEOLOGICAL UNCERTAINTY IN LARGE CIVIL ENGINEERING WORKS

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Unforeseen site conditions in large civil engineering works can represent values up to 35% of contract disputes (changed conditions clause). Construction delays, extra work and changed quantities due to difficult ground conditions may correspond to the major part of a contractor's claim. The paper deals with the approach required for geological uncertainty assessment, specially in TKLS (turn key, lump sum) contracts. Assessing geological uncertainty, from the contractor's view point, is a fundamental activity during bid pricing. Depending on this assessment and contingency provisions in the contractor's proposal, he may lose or win a contract, and in the last case, he may either make profit or not. Characterization of site geological conditions for civil engineering construction depends upon: geological domain (lithology, structure, etc...); type and size of engineering structure; professional experience of design team; quantity and quality of geotechnical exploratory campaign; and ... chance! Several cases, from Brazil and abroad, are reviewed, with respect to: site geological conditions; characteristics of engineering structure; problems encountered during construction or operation; damage evaluation and costs of repair works. Recommendations are made for reducing geological uncertainty in large civil engineering works.