



“The Effect of Geotechnical Report on Egyptian Contracts”

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المخلص:

يجب على المقاول القيام بتقرير تحقيق التربة لعلم جميع خصائصها قبل البدء في أي مشروع؛ اقترح تقرير التربة في السبعينيات و تم استخدامه في عقود البناء في عام 2003، قام المهندسين المعماريين بتحضير وثائق البناء لكي تشمل مراجع إلى وثائق أخرى دون أي قلق كبير. ولكن قد يأخذ ذلك في الاعتبار إذا كان تقرير ميكانيكا التربة يستخدم كوثيقة عقد؛ ويعد هذا التقرير وثيقة تعرض البيانات الواقعية لتفاصيل التربة للمشروع. والغرض من تقرير التربة هو الجمع بين البيانات الجيولوجية والمياه الجوفية وغيرها من البيانات التي تم الحصول عليها من تحريات التربة لاستخدامها في المشروع. وهو بمثابة مصدر واحد وشامل للمعلومات الجيولوجية التي تم الحصول عليها للمشروع. تقرير ميكانيكا التربة هو أداة هامة تستخدم في تصميم وإعداد وثائق البناء للمشروع. وأخيراً، ينبغي لعقود البناء أن توازن بين المخاطر بين المالك والمقاول مع مراعاة مواصفات التقرير الجيولوجي للتربة.

Abstract:

The contractor must do the geotechnical report to investigate the soil knowing all its characteristics before starting any project. Geotechnical report was suggested in 1970s and used in construction contract in 2003, Architects develops construction documents include references to other documents without any great concern. But it may take in consideration if geotechnical report used as a contract document. The geotechnical report is a document that presents the factual subsurface data for the project. The purpose of the geotechnical report is to combine geological, groundwater, and other data obtained from the soil investigations for use in a project. It serves as a single and comprehensive source of geotechnical information obtained for the project. The geotechnical report is an important tool used in creating the design and preparing the construction documents for a project. Lastly, construction contracts should balance the risk between the owner and contractor taking in consideration the geotechnical report specification.

Keywords

Geotechnical Report, Egyptian Contracts, Effect of Geotechnical Report, Civil law, Procurement law, Soil report, Soil investigation, Construction contract, Contract documents, Construction documents

Introduction

Geotechnical report is a document that determine the expected ground conditions of a specific site and gives some advices to the designer about the type of foundations a how it should be constructed. (Puerto, Gransberg, & Loulakis, 2017) In case the project is running into some problems, the geotechnical report is set to be the reference to from where is that problem coming from and what is the solution of it. The problem is that the geotechnical report could not be considered as a contract document, if the

geotechnical report made with a wrong detail it can make a serious problem at a project construction which by default arises a claim between project parties.

The geotechnical report was not mentioned in contract specifications until 2003. Geotechnical report was suggested first in 1970s and in 1978 research criteria developed a report on ground reference conditions. Moreover, the geotechnical report has only been adopted by the UK tunneling sector in the last 10 years. (Smith, 2011)

The aim of this research is to

- Conduct an appropriate data collection and analysis to review the impact of geotechnical report on construction contracts.
- Locate the geotechnical report effect on claim entitlement.
- Suggest a geotechnical report guideline for contractor and employer

Past Researches

Architects and engineers usually develop construction documents include references to other documents without any great concern. But it may take in consideration to engineers and owners if some of construction documents are used as a contract document, specifically the geotechnical report because it refers to soil conditions.

It may be the owner's aim not to include the geotechnical report as a contract document, it may be included as a contract document by reference in another part by the prime engineer or one of the owner's consultants. A Statements, such as "A Geotechnical Report is included and by its inclusion is hereby made a part of the contract documents" and "All grading, excavation, trenching, paving, cut, fill, and backfill shall comply with the recommendations in the geotechnical report" may be contrary to the owner's aim. So, what is the difference between these statements? The first one indirectly includes the geotechnical report as a contract document. The second one also makes the geotechnical report a contract document by referring to its recommendations. The problem is that the geotechnical report should not be included as a contract document due to its consideration as a construction document, and there is a big difference between "construction documents" and "contract documents." (Mason, 2017)

The geotechnical report content is not contractual in nature the text is not written in the obligatory language as found in a contract document, such as general conditions or specifications. Geotechnical reports are written with words such as "can be," "should be," and "it is recommended," which, either conflict with the drawings and specifications, or leave the decision completely up to the contractor if considered as a contract document. lastly, of which may be contradict with the designer's aims. As an example, a pavement cross section may be recommended of a certain thickness by the report. The designer will either make a professional decision to go with a thicker section or accept the recommendation as it is. In either case, the contract documents should mention the thickness, and not refer back to the geotechnical report. (Geren, 2010)

One series argument for preventing the geotechnical report from becoming a contract document can be found in AIA Document A201-2007, General Conditions of the Contract for Construction. allows the contractor to make a claim for unknown conditions if they differ materially from those indicated in the Contract Documents. Then any condition not indicated in the geotechnical report may be considered as being

materially different, If the geotechnical report was included as a contract document (Geren, 2010)

The Geotechnical Report is a document that presents the actual subsurface data for the project without including an explanation of these data. The purpose of the geotechnical report is to combine all geological, groundwater and other data obtained from the soil investigations for use by the several parties in the project including the owner, designers, contractors and other parties that may be influenced by the project. It is a comprehensive source of geotechnical information gained for the project. (Hashash, Jammoul, Su, & Bhat, 2014)

The Geotechnical report should contain the following information (ASCE, 2007):

- Descriptions of the geologic setting.
- Descriptions of the site exploration program.
- Logs of all borings, trenches, excavation and other site investigations.
- Descriptions of all field and laboratory test.
- Results of all field and laboratory testing.

The geotechnical report would include the logs of all borings that performed for the project, but should not present a subsurface profile constructed from the borings since such a profile requires considerable judgment and interpolation of the borehole records to show inferred strata boundaries. Background information and some subsurface investigations performed provided by the text of the geotechnical report, then the specific data are provided in appendices for the report. The introduction notes the purpose and scope of the report and presents a general project description. The background information section should identify other sources of geotechnical information that may have been obtained by others at or near the project site and may include subsurface investigation data previous construction projects. If such additional information is limited in volume, consideration should be given to including these data in an appendix to the report.

Geotechnical report information should also include a discussion of the regional and local soil setting, since such information will be invaluable in the assessment of the limited amount of factual data obtained from site investigations. It is recognized that a description of geological conditions requires interpretation of information in the literature and an understanding of the geological processes controlling the formation and properties of soil and rock deposits; however, since an understanding of the geological setting is fundamental to a successful tunneling project, such information is considered an essential component of the geotechnical report.

The report section on field investigations should include a brief description of the type of investigations performed, references for performing the investigations, the method of gaining and handling samples, and discussion of any special procedures used for the investigations. If specialty work is performed by others, the report prepared by the specialty firm can be included as an appendix to the geotechnical report and referenced within the text of the geotechnical report.

Claims and Disputes

Disputes have arisen about geotechnical report. A recurring feature in the early cases is material supplied by the employer on which the contractor has relied, or claims to have done so.

Ground conditions cases have continued to occur into the modern era and in all the major common law jurisdictions, at least. While ground conditions are not the same everywhere, and the legal position in contract and at law may vary, the basic ground conditions questions are similar. (Baker & Turrini, 2012)

At the time of preparing and negotiating the contract, the allocation of geotechnical report risk needs to be considered in detail. It is not sufficient to accept standard form provisions without reflection on their appropriateness to the project in question. Specifically, the question must be addressed as to whether the contractor is to be entitled to make a claim for geotechnical report risks, along the lines of the FIDIC Red Book. Moreover, part of this consideration will be identifying documents which the contractor is expressly entitled to rely upon, with the result that the contractor will be able to get time and/or money relief if the information of the geotechnical report is inaccurate or incomplete. (Griffin, 1993)

Alternative models of risk allocation may need to be reviewed. The employer may wish to transfer the majority of the ground risk to the contractor, as under the FIDIC Silver Book. The question as to the appropriateness of this model has a number of elements. The employer will need to be confident of finding a contractor with the capability to execute the project successfully and who is prepared to accept this risk burden. The employer will also need to be aware of, and willing to accept the implications in terms of time and cost of such an allocation. (Baker & Turrini, 2012)

Even the most successful negotiations and the drafting of appropriate provisions cannot prevent all disputes. Disputes about cost, time, defects and professional liability arise despite the existence of contracts covering the geotechnical report issues. If a dispute does arise, it needs to be managed proactively. The facts need to be analyzed fully and early and recorded in correspondence, relating closely to the contractual allocation of risk and the general law.

Geotechnical Report in Egyptian Laws

Discussing the entitlement of the geotechnical report, geotechnical report usually by default develops by a consultant which represents the owner. If not, the contractor must do the geotechnical report to investigate the soil knowing all its characteristics before starting the project, clause 447 “The seller shall be bound by the guarantee if the product does not include the qualities at the delivery time which the buyer is satisfied with, or if the product involves a defect that diminishes its value or usefulness according to the purpose intended to benefit from what is stated in the contract or what is apparent from the nature of the object, And the seller guarantees this defect even if he is not aware of its existence” means contractor guarantees to deliver the project to owner without any defects and stick to all geotechnical report provisions. So, when contractor done with a project the owner must check for defects, if there is some the owner shall inform contractor for these defects if he didn't mean the owner already accepted the project as it is. (Alawdon, 2014)

Moreover, clause 651 “The architect and the contractor shall ensure in joint liability, what occurs during ten years of total or partial demolition of buildings constructed, even if the demolition is caused by a defect in the same land or the employer has authorized the establishment of the defective facilities unless the contractors wanted to keep these facilities for less than ten years.” Trying to say that the contractor guarantees the new building with all its preferences for a period of ten years for delivering the project to owner. If the contractor does not inform the employer if there is a soil problem mention in the geotechnical report and continue working with owner proving, the entitlement will contractor’s. On another hand, the contractor must develop his geotechnical report anyway to investigate the soil properties otherwise any problem appears from the soil is his risk. (Alawdon, 2014)

Conclusion

Construction contracts need to be fairly made, and they should balance the risk between the owner and contractor. Identifying the geotechnical report as a contract document will likely shift the risk more towards the owner; whereas onerous disclaimers that try to shift all the risk onto the contractor may also work to the owner’s detriment. It is understandable that determining what constitutes “materially different” conditions is subjective at best. And when handling claims on the basis of such conditions, the contract parties and the engineer need to be reasonable. Additionally, contractors need to follow the provisions of the contract when encountering differing conditions, including prompt notice to the owner and leaving the conditions undisturbed. The geotechnical report is an important tool used in creating the design and preparing the construction documents for a project. But if this tool, like any hand tool, is used improperly, you can place yourself and others around you at risk. Finally, Owners and contractors should always promptly investigate the ground conditions and develop their own geotechnical report, if one of them finds such weird conditions in the soil they must tell each other.

Recommendations

The following recommendations were obtained:

- Under any circumstances contractor should pre-bid investigate the soil and make its own geotechnical report trying to avoid any weird action from the ground.
- Construction contracts need to be fairer, should balance the risk between the owner and contractor, allocating the geotechnical report risks in full detail.
- Owners should promptly investigate the ground conditions, if he finds such conditions do materially differs and cause an increase or decrease in contract cost of any part of work, an equitable adjustment shall be made and contract modified accordingly.
- Each party of a contract should ensure that they understand their duties and obligations under the contract and that they have the ability to perform these duties and obligations as required by the contract.
- If geotechnical report is a part of contract document will shift the risk more towards the owner.
- The geotechnical report is an important tool used in creating the design and preparing the construction documents for a project, if this tool used improperly, all the project parties will be at risk.

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