

Tunnelling

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A new standard for tunnelling contracts

A contractual standard specifically for the tunnelling industry is fast emerging on the horizon – the New FIDIC ‘Emerald’ Book. Ulrich Helm, Partner, and Fabian Bonke, an Associate, of the international law firm Hogan Lovells International LLP explain

THERE CAN BE NO DOUBT that subsurface construction projects require specialist contractual frameworks. Within these contractual frameworks, it is of paramount importance to manage the risks specific to underground projects such as uncertainties regarding the geological, geotechnical and structural performance of the subsurface space. Thus far, no internationally recognised standard forms for underground tunnelling contracts exist. The International Federation of Consulting Engineers (FIDIC), in cooperation with the International Tunnelling and Underground Space Association (ITA), is about to close that gap. The two organisations are jointly developing specific Conditions of Contract for Tunnelling and Underground Works under the working title ‘Emerald Book’.

Cooperation between ITA and FIDIC

The ITA has long since recognised the key role of contractual provisions. In 1974, the ITA established a Working Group on Contractual Sharing of Risks (today ITA Working Group 3). The Working Group has since published recommendations on a large variety of contractual topics. One key concern has

been to find ways to equitably distribute underground risk between owner, contractor and consultant. The recommendations further dealt with, inter alia; changed conditions clauses; full disclosure of available subsurface information; and the pre-qualification of

contractors.

Additionally, since the 1970's, ITA officials began discussions with representatives of FIDIC to include the ITA recommendations into FIDIC Conditions of Contract. These Conditions of Contract published by FIDIC are probably the most frequently used contract forms for international infrastructure projects.



Previous FIDIC editions

FIDIC has published a variety of different Conditions of Contract, which are now (unofficially) referred to according to the colour of their bindings: most renowned being the Red Book (building and engineering works designed by the employer) and the Yellow Book (building and engineering works designed by the contractor). In recent years FIDIC has published many new Conditions of Contract and the new – possibly Emerald coloured – book on Tunnelling and Underground Works will soon complement the FIDIC suite.

To this end, ITA and FIDIC in 2014 set up the shared Task Group 10 “Contract Form for Tunnelling and Underground Works” which consists of 3 members from FIDIC (Jim Maclure (United Kingdom), Gösta Ericson (Sweden), Hannes Ertl (Austria)) and 4 members from ITA (Andres Marulanda (Colombia), Charles Nairac (France), Martin Smith (United Kingdom/Korea) and the Chairman Matthias Neuenschwander (Switzerland)). In close cooperation with ITA Working Group 3, the shared Task Group 10 have met more than ten times so far taking its decisions unanimously.

What stage is the project at now?

In 2014, FIDIC and the ITA, upon proposal of Task Group 10, decided initially to develop a self-standing FIDIC book instead of solely providing a set of Particular Conditions to adapt an existing FIDIC book to the peculiarities of underground works. So far, the Task Group 10 has created a first draft of the General Conditions, which passed the Limited Internal Review by FIDIC, and the ITA. Other ITA Working Groups, the ITA Executive Council and stakeholders such as the European International Contractors, promoting the interests of the European construction industry, have been informed about the state of works. The next steps are for a Draft of Guidance for Conditions and for Tender Documents, and a Draft Foreword to be presented most likely during 2017. It is currently under discussion whether or not to provide users with a first test edition available for a two-year period, possibly in 2019/2020 and then afterwards with the final edition.

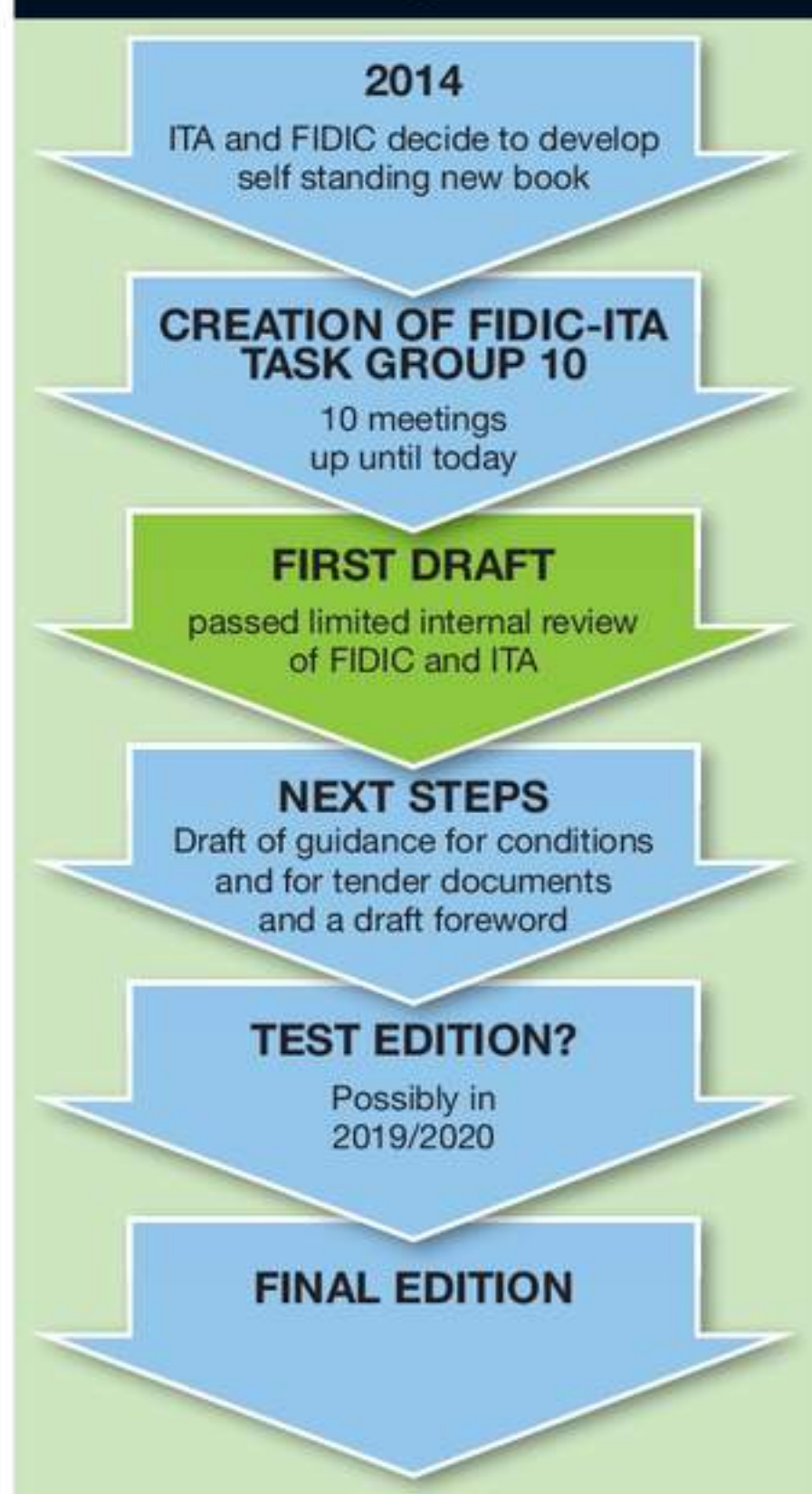
The need for new FIDIC conditions of contract?

The fact that contracting practices for tunnels must be dealt with in a different manner than other types of construction is already well recognised in the underground construction industry. The contractual approach has, however, been variable. Frequently contractual frameworks are uniquely drafted for one project. Occasionally, standard form contracts are used taking other FIDIC books or the New Engineering Contracts (NEC) as a point of departure. For the risk allocation, parties sometimes rely on national standards such as Swiss Code 118-198 (2004), General

Conditions for Underground Construction Works. Valuable guidance for contracting risk allocation (but also with regard to other key contractual practice areas relevant for subsurface construction projects) is also provided by ITA in Recommendations, Guidelines and Checklists.

The new FIDIC Conditions of Contract for Tunnelling and Underground Works could now close the gap and establish a contractual industry standard. It would recognise the uniqueness and complexity that has to be dealt with in underground construction projects. Underground works are special in terms of risk management and allocation because of unforeseeable risks caused by unpredictable ground behaviour. And underground construction projects are particularly complex and the complexity in project delivery models is ever increasing. The availability of a contractual standard could improve legal predictability for the industry and thereby contribute to the growth in the market.

Figure 1: Time line of the FIDIC Book tunnelling contract



CONTENT OF THE REFORM

Contractual standard for the Tunnelling Industry - The FIDIC Book aims to provide a contractual standard for large parts of the tunnelling industry. Firstly, it can be applied to the different excavation methods: blasting and mechanised tunnelling using TBMs. Secondly, it will provide flexibility with regard to different task allocations between owner

and employer. In this regard, it starts from a design-build contract as a basic scenario in which the owner only provides a preliminary design and specifications and the tenderers propose to perform detailed design and to construct. The conditions can then, however, be modified to a design-bid contract, in which the owner completes the tunnel design including details and the technical specifications. Third, the new FIDIC Book will likely have an impact on contracts in the tunnelling industry beyond the employer-contractor contracts, for which it is tailored. This applies in particular to subcontractor agreements, which will likely adopt basic principles.

Structure of new FIDIC Conditions of Contract - The new FIDIC Conditions of Contract will come as a self-standing new FIDIC Book, including General Conditions of Contract and Guidance Notes to Particular Conditions and to the Preparation of Tender Documents. The FIDIC Yellow Book will serve as a model document with adjustments based on careful reading of the FIDIC Pink Book (which is a variation of the Red Book used by Multilateral Development Banks) and to the FIDIC Form of Contract for Dredging and Reclamation Works. Most of the provisions of the FIDIC Yellow Book will thus be inserted unchanged into the new FIDIC Book. In the current draft version, approximately 10% of the Yellow Book sub-clauses have been amended to accommodate the contractual challenges typical to underground construction.

Allocation of risk - One of the key elements of the new FIDIC Book is the standard contractual risk allocation which has been developed in accordance with basic risk management principles. Hereafter, the risks of unexpected subsurface and groundwater conditions lie with the employer as the party who can best control these risks. This seems justified since the employer benefits most from a completed project, the employer should, on the one hand, pay if the subsurface conditions are worse than anticipated and, on the other hand, benefit if the ground is better than anticipated. The performance risk, on the contrary, lies with the contractor as the party who can best handle expected ground conditions.

Key Role: Geotechnical Baseline Report and Baseline Schedule - A key role for the allocation of risks in the new FIDIC Book will be assigned to the so-called Geotechnical Baseline Report (“GBR”). The “GBR” sets out the sub-surface conditions anticipated under the contractually agreed underground excavation and lining design and construction methodology, and states the allocation of the risks for sub-surface conditions between the parties. The GBR shall be incorporated within

the contract documents taking priority over General Conditions.

Based on and consistent with the Geotechnical Baseline Report, another key document is developed: the "Baseline Schedule". It contains the anticipated work items and activities related to the underground excavation and lining, such as ground treatment, excavation or ground support measures, with the respective production rates.

Adjustments to time and price

As subsurface construction projects must deal with the scrutiny of scheduling on the one hand, while on the other hand the specific geological circumstances require for a flexible accommodation of unforeseen events, the new FIDIC book on Tunnelling and Underground Works will provide for

predicted.

Furthermore, the contractor shall benefit from a bonus payment if the construction is successfully completed by the contractor prior to the date fixed for completion in the contract.

Key Role: Engineer

The new FIDIC book assigns a strong role to the engineer. He is acting, on the one hand, as the employer's agent and, on the other hand, with a strong independent judgment. This double role is a common feature in the different FIDIC books but requires a high degree of impartiality and fairness from the side of the engineer. The engineer undertakes a broad range of measures associated with the correct day-to-day administration of the contract and plays a central role in resolving disputes. The new FIDIC book will assign, inter

tunnelling projects. In fact, ITA recommends DAB and arbitration as the best fora to resolve these complex disputes.

Conclusion

The new FIDIC book has the potential to develop a contractual standard for the tunnelling industry. It adapts worldwide established FIDIC rules to the particular needs of the underground construction industry, in particular with regards to the risk allocation and the complexity of the projects. The development of such a contractual standard could enhance legal predictability in tunnelling projects and thus contribute to economic growth in the business sector as a whole.

It is, however, clear that in view of the variety of contract situations the FIDIC book cannot be a "one size fits all" solution. The parties' different contractual needs and interests impact the suitability of contractual provisions. For example, will the employer's and contractor's experience and know-how determine the choice of design-bid-build contract, design-build contract or a combination thereof. Also, the parties' interests with regard to the allocation of risks for pricing and timing might differ from project to project. In order to facilitate an adaptation to project specific issues, the new FIDIC book will provide valuable guidance in its FIDIC Particular Conditions, which can be used to modify the General Conditions. It is, however, of paramount importance that no ambiguity is created, either with the General Conditions or between the clauses in the Particular Conditions.

Tailor-made advice may be required to conduct a risk assessment of the FIDIC book with regard to the applicable contract law. Since the FIDIC book is a contract agreed on by the parties, issues such as the interpretation and validity of its provisions are to be determined according to the applicable contract law. Therefore, it is not uncommon that the contractual provisions are interpreted differently under national laws. It is also possible that the governing law might, in exceptional cases, actually override provisions of FIDIC. This concerns, in particular, provisions on damages or limitation of liability which are often critically viewed under national contract laws and therefore require careful consideration.

The new FIDIC book will provide valuable guidance in its FIDIC Particular Conditions, which can be used to modify the General Conditions.

adjustments of time for completion and contract price.

Under the new FIDIC Book the time of completion shall be adjusted according to the actually encountered ground conditions. To this end, the actual progress of the underground excavation is compared to the time projections resulting from production rates provided by the contractor in the Baseline Schedule. The FIDIC Book will then provide for a detailed procedure to measure the accomplished underground excavation and lining. The measurement shall be provided by the contractor and thereafter confirmed or rejected by the engineer.

As for the pricing the FIDIC book also aims at a balance between the conflicting parties' interests. On the one hand, the employer will generally know the total price he will be obligated to pay according to expected subsurface conditions. On the other hand, the contractor will be compensated for work beyond his control.

In furthering this goal, FIDIC and ITA decided to include a lump sum price contract as appears in the FIDIC Yellow Book and at the same time introduced a flexible remuneration according to ground conditions, both foreseen and unforeseen. As with the time for completion, the contract price can be adapted according to the measurement of the completed underground excavation and lining works. The FIDIC book provides for a relief for the contractor in case the actual physical conditions encountered are worse than the

alia, the following tasks to the engineer:

- Determination of necessity of safety, stability, timely progress and completion measures;
- Overview of measurement of underground excavation;
- Adjustment of contract price

Dispute resolution process

In line with the other FIDIC books, the new FIDIC book provides for a three-step procedure for the purposes of dispute settlement. First, any dispute has to be referred to the Dispute Adjudication Board (DAB) which consists of one expert or a group of experts. As is the case with all future FIDIC projects, the DAB is appointed permanently for the term of the project and not ad hoc for one single dispute. The DAB renders a temporarily binding decision. Second, the party dissatisfied with the DAB decision might seek a last attempt at dispute avoidance and amicable settlement may be reached. Third, the dispute may be referred to arbitration governed by the rules of arbitration of the International Chamber of Commerce (ICC) where the dispute will be finally settled.

The provided dispute resolution mechanism has already proven to be successful in the other FIDIC books. The availability of a standing DAB assists in avoiding disputes and provides for quick decision-making which is essential in large construction projects. This FIDIC approach is in line with the dispute resolution mechanisms suggested by ITA for

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