

Suitability of the FIDIC Silver Book (1999) as a Standard Form of Construction Contract for Use in Privately-Financed Infrastructure Projects

CHRISTOPHER R. SEPPÄLÄ

Legal Advisor to the FIDIC Contracts
Committee. Lawyer.

RESUMO: Enquanto um governo nacional tem uma variedade de maneiras de envolver o setor privado em projetos de infra-estrutura, este estudo vai focar nos projetos *Build-Operate-Transfer* – “BOT” (espécie de parceria público-privada) e, especificamente, na idoneidade do uso das Condições FIDIC de Contrato para projetos *EPC/Turnkey* publicados em 1999 (“the Silver Book” – o “Livro Prata”) em tais projetos. Este artigo é dividido em três seções como segue: (I) O papel do contrato de construção num projeto BOT, (II) Como o Livro Prata do FIDIC cumpre o papel, e (III) Conclusão.

PALAVRAS-CHAVE: Projetos de infra-estrutura – FIDIC – Contratos de construção.

Abstract: While a national government has a variety of ways of involving the private sector in infrastructure projects, this paper will focus on Build-Operate-Transfer (“BOT”) projects and, specifically, on the suitability of the use of the FIDIC Conditions of Contract for EPC/Turnkey Projects published in 1999 (the “Silver Book”) in such projects. This article is divided into three sections as follows: (I) The role of the construction contract in a BOT project, (II) How the FIDIC Silver Book fulfills the role, and (III) Conclusion.

KEYWORDS: Infrastructure projects – FIDIC – Construction contract.

SUMÁRIO: I. The role of the construction contract in BOT projects – II. How the FIDIC Silver Book fulfills the role of a construction contract for a BOT project – A. Employer’s requirements – B. Contractor’s responsibilities: 1. Turnkey responsibility; 2. Design responsibility; 3. Construction responsibility; 4. Responsibility for unforeseeable conditions; 5. Responsibility for timely completion – C. Contract price – D. Other provisions: 1. Payments; 2. Variations; 3. Tests on completion and after completion; 4. Limitations on liability; 5. Correction of defects; 6. Guarantees; 7. Changes in law; 8. Force majeure; 9. Suspension and termination: (a) Suspension; (b) Termination; 10. Claims, disputes and arbitration – III. Conclusion.

I. THE ROLE OF THE CONSTRUCTION CONTRACT IN BOT PROJECTS¹⁻²

In a typical BOT scheme, a special purpose company (the “*Project Company*”) has the right and obligation under a concession agreement with a state (the “*Grantor*”) to build and operate some form of infrastructure. This infrastructure may, for example, be a road, tunnel, bridge or airport, or a facility which provides a utility service such as electricity, water or gas. The Project Company finances the construction of the facility through loans from banks or the capital markets as well as through equity investments from its shareholders.

To satisfy the Project Company’s obligation to the state to build the infrastructure, the Project Company will ordinarily enter into a construction contract with a contractor. Under such a contract, the contractor will be required to design, build, test and commission the project on a turnkey basis for a fixed, lump sum price and within a fixed time for completion, guaranteeing a specific quality or level of performance for the completed works.

The terms of the construction contract (which is referred to as an engineering, procurement, construction or EPC contract or, alternatively, as a turnkey contract) will be, as far as possible, “back-to-back” with the concession agreement, and thus any construction risk placed on the Project Company by the concession agreement will, through the construction contract, flow down to the contractor. The contractor may, in turn, subcontract certain of its construction contract obligations to other entities in order to share risks and revenues.

In a typical BOT project, for example the construction and operation of a gas-fired power plant, the EPC contract is the means by which the project is provided with its only money-making asset. The price paid to the contractor is usually the largest capital expenditure incurred by the Project Company. The contract is also, unfortunately, the most likely source of significant cost overruns. The economic viability of the price under the contract with the purchaser of output from the project (sometimes called an “*offtake contract*”) depends on the EPC contract price not changing too much.

Sponsors expecting a return on equity will want to protect their expected returns by placing construction risk (and, in particular, the risk of cost overruns, project performance deficiencies, and delays) on the contractor. Sponsors also know that the more risk they can transfer to the contractor, the less direct or indirect support they are likely to be asked to provide to the project by lenders to cover such risk.

1. This paper contains the author’s views and does not necessarily reflect the views of his law firm or the FIDIC Contracts Committee or FIDIC.
2. This article is based on a paper presented at a conference entitled “Best Practices in International Construction Contracts” organized by the International Bar Association in Rio de Janeiro, Brazil on August 31, 2007. The author acknowledges with thanks the comments, from a project finance standpoint, of his partners, Victor J. DeSantis and Edward R. Neaher, Jr., in the Washington, D.C. office of White & Case LLP. O autor mantém seus direitos autorais neste e em todos os outros trabalhos publicados nesta revista.

Any lender will want to satisfy itself as to the expertise and experience of the contractor and check the terms and risk allocation under the EPC contract before committing itself to financing. This is particularly so where, as is often the case, the contractor is an affiliate of one of the sponsor shareholders of the Project Company and, hence, the Project Company has a conflict of interest.

Finally, the result of the EPC contract will interest the Grantor. The EPC contract will result in the piece of infrastructure that will be relied upon by the Grantor during the term of the concession period and will be handed over to the Grantor at the end of that period. Thus, even if the Grantor is, in theory, not legally concerned by the relations between the Project Company and its contractor, in practice, it will at least require a copy of the EPC contract for information and will often want to follow the work on site closely to ascertain that what it will be receiving will comply with the concession.

All these factors will put pressure on the contractor to accept an increasing amount of responsibility and construction risk. At the same time, the contractor will naturally be inclined to maintain that normal principles of risk allocation under construction contracts should apply and that, therefore, risks which are unforeseeable or beyond its control should remain with the Project Company.

For their part, lenders may be less concerned about having the Project Company pay a higher construction contract price in order to induce the contractor to accept as much construction risk as possible. Sponsors (in particular those not affiliated with the contractor) will generally view a higher contract price as reducing their equity return and will be much more sensitive to contract pricing.

II. HOW THE FIDIC SILVER BOOK FULFILLS THE ROLE OF A CONSTRUCTION CONTRACT FOR A BOT PROJECT

In 1999, FIDIC introduced a new suite of construction contracts for "major works".³ Among these was FIDIC's Conditions of Contract for EPC/Turnkey Projects also known as the "*Silver Book*". Unlike the 1999 editions of the other contracts in this suite (FIDIC's Conditions of Contract for Construction or "*Red Book*" and Conditions of Contract for Plant and Design Build or "*Yellow Book*"), this was an entirely new form of contract which is designed, principally and specifically, to address the increasing demand for EPC or turnkey construction contracts for BOT projects.⁴

Probably, the biggest difference between the Silver Book, on the one hand, and the Red and Yellow Books, on the other, is in the way in which they allocate risk.

FIDIC's Red and Yellow Books are based on the principles of balanced risk-sharing between the employer and the contractor.

3. Simultaneously, a form for "minor works", called the "*Green Book*", was also produced.
4. However, this is not the first turnkey form of contract which FIDIC has issued. In 1996, FIDIC had issued a form of Design-Build and Turnkey Contract (the "*Orange Book*"). However, the Orange Book has now effectively been replaced by the new Silver and Yellow Books.

However, the Silver Book was developed to respond to what FIDIC saw as market demand for a form of contract which provided greater certainty of final price and of the final completion date. FIDIC believed that, in the case of BOT projects, among others, employers would be willing to pay more – some times much more – for a project if they could be reasonably confident that the agreed price and final completion date would remain substantially unchanged.

To address this demand, FIDIC developed the Silver Book, under which the contractor is required to assume a wider range of risk than under the traditional Red and Yellow Books. This is probably the biggest differences between the Silver Book, on the one hand, and the Yellow and Red Books, on the other.

How does the Silver Book otherwise differ significantly from the Red and Yellow Books?

Under the Silver Book, as in the case of the Yellow Book (but unlike the Red Book), the design is provided by the contractor. However, a difference in the Silver Book compared to the Yellow and Red Books is that those contracts are administered by an engineer whereas the Silver Book is administered by the employer (or the employer's representative, if he appoints one). Thus, in the case of the Silver Book, there is no intermediary between the employer and the contractor as in the case of the Yellow and Red Books.

As stated above, FIDIC produced the Silver Book to respond specifically to market demand in the case of BOT and certain other projects, and FIDIC does not advocate the Silver Book for general use. Given a free choice, FIDIC would normally recommend, for a project designed largely by the contractor, the use of the FIDIC Yellow Book as it provides for balanced risk-sharing between the parties.

Like any standard form of contract, the provisions of the Silver Book are expected to be adapted to suit the specific needs and circumstances of each project.

The Silver Book remains a standard form of construction contract which, like other FIDIC standard forms, has been prepared by engineers principally for practical use by the parties to such contracts and by engineers. Consequently, it does not deal with issues of specific concern to lenders, sponsors or the Project Company in the context of a BOT project, such as – to take only one example – whether the Project Company's obligations to the contractor are back-to-back with the Project Company's obligations to the Grantor. Accordingly, as they are not dealt with in the Silver Book, the author will refer to some of these specific concerns or requirements of lenders or the Project Company in the course of this paper.

How does the FIDIC Silver Book address the expectations, or requirements, discussed above, of the various participants in a BOT project? This issue is addressed below.

A. EMPLOYER'S REQUIREMENTS

In the case of any project, it is first appropriate to look at the expectations or requirements of the employer or owner. What is the building or other facility

which the employer or owner wants built? What are the employer's requirements for the completed works, including functional requirements, quality and scope?

The FIDIC Silver Book (like the Yellow Book) assumes that there will be a tender process which precedes the construction contract and that, in the invitation to tender documents which the employer or owner will issue, he will provide or specify to tenderers the kind of building or facility it wishes to have constructed, be it an airport, a cement plant or a toll road, at a certain location and with a certain capacity.⁵

This description of the building or facility to be constructed is referred to as the "Employer's Requirements". The Employer's Requirements might, for example, specify the construction of a power plant which would generate 1,000 megawatts of power or an airport which would have a capacity of 10 million passengers per year or a cement plant that will produce 5,000 tons of cement per day.

Among other things, the Employer's Requirements would specify the tests and performance requirements, which the building or facility is to satisfy.

The Employer's Requirements may be very general and brief leaving broad discretion to the turnkey contractor or they may be long and detailed, and be accompanied by quite detailed drawings and extensive specifications with which the contractor must comply. This will be entirely a matter for the employer and its consultants to decide.

In a BOT project, the Employer's Requirements will typically derive in whole or in part from provisions in the concession agreement and, thus, from the requirements of the Grantor.

B. CONTRACTOR'S RESPONSIBILITIES

Now it is appropriate to look at the obligations of the contractor.

1. *Turnkey responsibility*

Lenders in BOT projects will generally require that, contrary to traditional construction practice, both design of the works, and their construction, including the provision of all fixtures, fittings and equipment, be the responsibility of a single contractor (which may, however, and often will be, a joint venture). In this way, there is a single person responsible to the Project Company under the construction contract for the design and construction of the relevant building or facility. As a consequence, the construction contract will be an EPC or turnkey contract.

As indicated by its name, this is plainly the case of the FIDIC Silver Book. As is also true under the Yellow Book, under the FIDIC Silver Book, the contractor

5. In fact, however, in a BOT project, the contractor will often be an affiliate of a member of the consortium submitting a bid to the State for the concession agreement, in which case, there will have been no public tender process nor tender documentation available for inclusion, or reference, in the contract.

agrees to design and construct the works in accordance with the Employer's Requirements.⁶

2. Design responsibility

Consistent with the goal of passing additional risk to the contractor, the FIDIC Silver Book makes the contractor not only responsible for the design of the works (as is true under the Yellow Book) but also for the accuracy of the Employer's Requirements, with very limited exceptions.

In this connection, Sub-Clause 5.1 provides as follows:

"5.1 General Design Obligations

The Contractor shall be deemed to have scrutinised, prior to the Base Date, the Employer's Requirements (including design criteria and calculations, if any). *The Contractor shall be responsible for the design of the Works and for the accuracy of such Employer's Requirements (including design criteria and calculations), except as stated below.*

The Employer shall not be responsible for any error, inaccuracy or omission of any kind in the Employer's Requirements as originally included in the Contract and shall not be deemed to have given any representation of accuracy or completeness of any data or information, except as stated below. Any data or information received by the Contractor, from the Employer or otherwise, shall not relieve the Contractor from his responsibility for the design and execution of the Works.

However, *the Employer shall be responsible for the correctness of the following portions of the Employer's Requirements and of the following data and information provided by (or on behalf of) the Employer:*

- (a) portions, data and information which are stated in the Contract as being immutable [*Author's Note: e.g. the location and nature of the site*⁷] or the responsibility of the Employer,
- (b) definitions of intended purposes of the Works or any parts thereof,
- (c) criteria for the testing and performance of the completed Works [*Author's Note: as they define the level of quality that the employer wishes the works to achieve*], and
- (d) portions, data and information which cannot be verified by the Contractor,⁸ except as otherwise stated in the Contract." [Emphasis added]

FIDIC has explained the purpose of Sub-Clause 5.1 in the following terms:

"At first, it may appear strange that one of the two Parties to a Contract agrees to be responsible for a technical document prepared by the other Party for inclusion in the Contract. However, *the intention is to minimise the extent of the*

6. Clauses 4 and 5 of the Silver and Yellow Books.

7. Under the Silver Book (see Section III.B.3 below), the contractor is required to assume the risk of site conditions generally.

8. Lenders are likely to require that all this information is clearly defined and set out so that they will know for what information the contractor's liability is excluded.

*Employer's responsibility, recognizing that the EPCT [Silver Book] will often be used in situations where the Contractor's technical resources exceed those of the Employer. The Employer's Requirements may incorporate documents (for example, standard specifications) which the Employer thinks may be appropriate, but some of these documents may specify an inappropriate level of quality, which is insufficient to achieve the mandatory requirements described in the sub-paragraphs of EPCT 5.1."*⁹ [Emphasis added]

Contrary to the Silver Book, the Yellow Book does not make the contractor responsible for the Employer's Requirements. Instead, the Yellow Book gives the contractor, in certain circumstances, a right to claim for any additional costs and time the contractor may have incurred as the result of an error in the Employer's Requirements.¹⁰

However, FIDIC's view is that, if the contractor is to be made responsible for the Employer's Requirements (including design criteria or calculations), as provided for under the Silver Book, then he must be given adequate time to study them. In this connection, the Introductory Note to the Silver Book provides that the Silver Book is not to be used:

"[i]f there is insufficient time or information for tenderers to scrutinize and check the Employer's Requirements or for them to carry out their designs, risk assessment studies and estimating..."

In any such case, FIDIC recommends that the Yellow Book be used instead.

Consistent with the contractor's total design responsibility, under the Silver Book (unlike the Yellow and Red Books), the contractor is wholly responsible for setting out the works in relation to original points, lines and levels of reference specified in the contract.¹¹ If there are any errors in that information then, under the Silver Book, the contractor must correct them and is responsible for correctly positioning the works at his own cost.

3. Construction responsibility

Like the Yellow Book, the Silver Book passes overall responsibility for the construction of the works to the contractor. Sub-Clause 4.1 [Contractor's General Obligations] of the Silver Book provides, in part, that:

"The Contractor shall design, execute and complete the Works in accordance with the Contract, and shall remedy any defects in the Works."

In addition, Sub-Clause 4.1 of the Silver Book (like the corresponding clause of the Yellow Book) provides, in part, that:

"When completed, the Works shall be fit for the purposes for which the Works are intended as defined in the Contract."

9. The FIDIC Contracts Guide, p. 139.

10. See Sub-Clauses 5.1 [errors discovered within scrutiny period] and 1.9 [errors discovered after scrutiny period] of the Yellow Book.

11. Sub-Clause 4.7.

Thus, by this provision, the contractor is required to guarantee that whatever happens, the works will satisfy the purposes that are defined in the contract (and which should be in the Employer's Requirements) whether those are, to take some examples: to permit a power plant to generate a 1,000 mega-watts of power or a cement plant to produce 1,000 tons of cement per day or an airport to have a capacity of 10 million passengers per year. Whatever is necessary to accomplish that objective, the contractor is obliged to take the steps necessary to attain it in exchange for the contract price (see Section III.C below).

This is emphasized by Sub-Clause 4.1, which goes on to provide, in part, that:

"The Works shall include any work which is necessary to satisfy the Employer's Requirements, or is implied by the Contract, and all works which (although not mentioned in the Contract) are necessary for stability or for the completion, or safe and proper operation, of the Works."

Therefore, if there are any works that the employer may have omitted to mention in the Employer's Requirements which are necessary, nevertheless, to enable the works to be fit for purpose, then the contractor must supply those works for the contract price.

Under the Silver Book, the contractor is not required to obtain the employer's consent to the contractor's subcontractors as is the case under the Red and Yellow Books. But he may (if this is specified in the Particular Conditions) be required to give the employer not less than 28 days' prior notice of their intended appointment, their intended commencement of work and their intended commencement of work on site.¹²

4. *Responsibility for unforeseeable conditions*

Just as we have seen that the Silver Book takes a different approach from the Yellow Book as regards the contractor's responsibility for design, so the Silver Book takes a different approach from the Yellow Book as regards responsibility for site conditions and unforeseeable conditions generally.

Sub-Clause 4.10 of the Silver Book [Site Data] provides that:

"The Employer shall have made available to the Contractor for his information, prior to the Base Date,^[13] all relevant data in the Employer's possession on subsurface and hydrological conditions at the Site, including environmental aspects..."

"The Contractor shall be responsible for verifying and interpreting all such data. The Employer shall have no responsibility for the accuracy, sufficiency or completeness of such data, except as stated in Sub-Clause 5.1 [General Design Responsibilities]."¹⁴

12. Sub-Clause 4.4.

13. Base Date is defined in Sub-Clause 1.1.3.1 as the date 28 days prior to the latest date for submission of the Tender.

14. As discussed above in relation to Sub-Clause 5.1, the exception in that Sub-Clause refers to: (a) information which is stated to be immutable or the responsibility of the employer, (b) definitions of the intended purposes of the works.

However, perhaps one of the most important Sub-Clauses in the Silver Book as regards the allocation of risk is Sub-Clause 4.12 [Unforeseeable Difficulties]. This basically makes the contractor responsible for any unforeseeable difficulties that might be encountered during construction¹⁵ and provides, in part, as follows:

"Except as otherwise stated in the Contract:

(a) the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Works;

(b) by signing the Contract, the Contractor *accepts total responsibility for having foreseen all difficulties and costs of successfully completing the Works*; and

(c) *the Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs.*" [Emphasis added]

Not only does the Yellow Book contain no such clause but it entitles the contractor to seek an extension of time and to claim for its additional cost in the event the contractor encounters physical conditions at the site which an experienced contractor could not reasonably have been expected to foresee.¹⁶

However, FIDIC has been concerned that the Silver Book be abused by being used in circumstances which are inappropriate. Consequently, in an Introductory Note to the Silver Book, FIDIC made it clear that the Silver Book was unsuitable for use in the following circumstances:

"If there is insufficient time or information for tenderers to scrutinise and check the Employer's Requirements or for them to carry out their designs, risk assessment studies and estimating (taking particular account of Sub-Clauses 4.12 and 5.1).

If construction will involve substantial work underground or work in other areas which tenderers cannot inspect."

In either of these cases, FIDIC recommends that the Yellow Book be used instead.

In the case of a BOT project, sometimes the Grantor (of the concession) can be persuaded to accept responsibility, in whole or in part,¹⁷ for unforeseeable conditions at the site or elsewhere. In these situations, of course, the Project Company could agree to moderate the corresponding provisions of the Silver

(e) criteria for testing and performance of the works, and (d) portions, data and information which cannot be verified by the contractor except as otherwise stated. Thus, this is a limited exception.

15. However, the Silver Book, like the Yellow Book, makes exception for, among other things, *force majeure* (as defined) and the discovery of fossils and other antiquities. In these cases, the contractor is given a right to claim any additional time or cost incurred, by virtue of Clause 19 and Sub-Clause 4.24, respectively.

16. Sub-Clause 4.12 of the Yellow Book. Lenders may, on occasion, accept responsibility for this kind of risk even in a turnkey contract.

17. E.g. subject to a specified limit, being either a specified financial amount or defined by reference to site conditions.

Book and grant to the contractor similar relief, perhaps conditioned on such relief actually being granted under the concession agreement.

5. *Responsibility for timely completion*

Completion of the works by the Time for Completion will be critical to the Project Company and to the lenders as the revenues from the project will not normally begin to be generated until after completion. The Project Company and the lenders will therefore want to ensure that the works are completed by the time specified in the construction contract and, if they are not, that the Project Company has adequate remedies against the contractor.

In this connection, the Silver Book, like virtually every construction contract, requires the contractor to complete the whole of the works and each section (if any) within a specific Time for Completion of the works or section (if any), including after passing of any Tests on Completion.¹⁸

However, under the Silver Book, the grounds upon which the contractor can claim extension of time are limited to (a) a variation, (b) a cause of delay giving an entitlement to an extension under these conditions (such as a *force majeure* event under Sub-Clause 19.4) and (c) any delay attributable to the employer.

These grounds are significantly more limited than under the Yellow Book. Under the Yellow Book, the contractor is also entitled to an extension of time for:

- (1) exceptionally adverse climatic conditions, and
- (2) unforeseeable shortages in the availability of personnel or Goods caused by epidemic or governmental actions.¹⁹

Neither of these grounds is available under the Silver Book. The contractor can only claim an extension for weather conditions under the Silver Book if they should constitute *force majeure*, e.g. as in the case of very extreme weather conditions such as hurricane or typhoon.

Under the Silver Book (as under the Yellow Book), if the contractor's actual progress is too slow to complete within the Time for Completion or its progress has fallen or will fall behind its current program, other than as a result of the grounds for which the contractor is entitled to an extension of time, then the employer may instruct the contractor to accelerate its works.²⁰

18. Sub-Clause 8.2. In the case of a BOT project, the Project Company and the lenders may wish to provide that the contractor's right to an extension of time will depend on whether the Project Company receives a corresponding extension from the Grantor under the concession agreement, at least where the Project Company is not at fault.

19. "Goods" are defined in Sub-Clause 1.1.5.2 to mean Contractor's Equipment, Materials, Plant and Temporary Works [Author's note: all defined terms], or any of them as appropriate. See also Sub-Clause 8.4 of the Yellow Book.

20. Sub-Clause 8.6. While Clause 8 does not expressly obligate the contractor to minimize or mitigate any delay, Sub-Clause 8.1 requires the contractor to proceed with the Works "with due expedition and without delay" and, as has

Under the Silver Book, as under the Yellow Book, if the contractor fails to complete the work within the Time for Completion as it may have been extended by the employer, the contractor will be liable for liquidated damages (called "delay damages") for its default for every day of delay. This is stated to be the only damages due for such default. The relevant clause further provides that the total amount of delay damages due cannot exceed a maximum amount or cap of delay damages which is stated in the Particular Conditions.²¹ This is usually between five per cent and fifteen per cent of the contract price and lenders will be concerned to ensure that the amount of delay damages will be at least sufficient to fund debt service payable during any period of delay.

Ultimately, the employer can terminate the contract under Sub-Clause 15.2 and claim damages for breach of contract (other than damages for delay, as defined)²² as well.

C. CONTRACT PRICE

As in the case of the Yellow Book, the Silver Book provides that the contractor must complete the works for a fixed lump sum contract price subject to adjustments as provided for in the contract.²³ However, as a result of both the greater risk placed on the contractor by the Silver Book and the nature of that contract, the number of adjustments that could increase the contract price under the Silver Book is reduced as compared to the Red and Yellow Books.

Under the Red and Yellow Books, about 30 clauses entitle the contractor to claim additional money or time from the employer whereas under the Silver Book there are 22 such clauses.²⁴

As an illustration of the more "firm" nature of the contract price under the Silver Book as compared to the Red and Yellow Books, the following is a list of 8 clauses entitling the contractor to claim additional money or time under the Red and Yellow Books which do not exist in the Silver Book:

been noted, if the contractor is in culpable delay, the employer may, under Sub-Clause 8.6, instruct the contractor to accelerate its Works.

21. Sub-Clause 8.7.

22. Contractual limitations on damages are subject to applicable law and typically will not apply in cases of willful default or gross negligence of the contractor.

23. Sub-Clause 14.1.

24. See the author's article Contractor's claims under the FIDIC contracts for major works, v. 21, n. 4, 2005, *Construction Law Journal*, London, England. In the case of BOT projects, the Project Company and the lenders may wish to provide in the construction contract that – where a claim relates to funds ultimately due from the Grantor – the contractor may not be entitled to payment until after the Project Company has received, or become entitled to receive, a corresponding payment from the Grantor under the concession agreement. However, in such a case, the Project Company will likely be deemed to have, under applicable law, an obligation to the contractor to pursue corresponding claims against the Grantor under the concession agreement with due diligence.

	Sub-Clause Title	Contractor's Entitlement
1.9	[Red Book only] Delayed Drawings or Instructions	Contractor may claim extension of time, cost and reasonable profit if Engineer fails to issue a notified instruction or drawing within a reasonable time
1.9	[Yellow Book only] Errors in the Employer's Requirements	Contractor may claim extension of time, cost and reasonable profit for error in Employer's Requirements which was not previously discoverable
4.7	Setting Out	Contractor may claim extension of time, cost and reasonable profit for errors in original setting-out points and levels of reference
4.12	Unforeseeable Physical Conditions	Contractor may claim extension of time and cost if he encounters physical conditions which are Unforeseeable
10.2	Taking Over of Parts of the Works	Contractor may claim cost and reasonable profit attributable to the Employer's taking over of a part of the works other than as agreed
12.3	[Red Book only] Evaluation	Contractor's entitlement to new rates or prices for work whose quantity has been changed or which is varied
12.4	[Red Book only] Omissions	Contractor may claim a cost which, although it had been included in a BoQ item, he would not recover because the item was for work which has been omitted by Variation
13.2	[Red Book only] Value Engineering	Contractor may, in certain circumstances, claim half of the saving in contract value (as defined) of a design proposal of the Contractor which is approved by the Engineer

While it can be provided for, the Silver Book, unlike the Yellow Book, contains no price escalation clause providing for the adjustment of the Contract Price for increase or decrease in the cost of labor, Goods and other inputs to the Works.²⁵ The contractor is expected ordinarily to bear this risk.

D. OTHER PROVISIONS

The other provisions of the Silver Book do not vary a lot from the Yellow Book, that is, from a normal construction contract with balanced risk-sharing where the contractor is doing the design and, therefore, they will be reviewed only briefly below.

25. Compare Sub-Clause 13.8 of the Silver and Yellow Books.

1. *Payments*

As in the case of the Yellow Book, the Silver Book envisages the employer will make an advance payment, as an interest-free loan for mobilization and design, to the contractor which the contractor would repay through proportional deductions from interim payments.²⁶ As in the case of the Yellow Book, the Silver Book provides that the contractor will be paid interim payments on the basis of a Schedule of Payments specifying when installments of the contract price will be due.²⁷ These installments may be due either:

(a) at specified times (e.g. every three months), assuming the contractor's rate of progress does not differ significantly from what is anticipated, or

(b) on the basis of payment milestones which are defined by reference to stages in the physical completion of the works.²⁸

2. *Variations*

The Silver Book, like the Yellow Book, contains a clause entitling the employer (or engineer in the case of the Yellow Book) to instruct variations to the works subject to certain exceptions.²⁹

This should be broad enough to enable the Project Company instruct any variation that may be required under the concession agreement.

3. *Tests on completion and after completion*

As we have seen, completion is a critical event in any BOT project as it defines when possession, care and control of the works passes from the contractor to the Project Company and when the facility may begin to generate revenue. As in the case of the Yellow Book, the Silver Book provides for Tests on Completion, including pre-commissioning tests, commissioning tests and trial operation which demonstrate that the works or a section perform safely, reliably and in accordance with the contract.³⁰ Assuming the works have passed the Tests on Completion, then a Taking-Over Certificate for the Works may be issued³¹ (and the Defects Notification Period, which will normally last for one or two years, will commence³²).

As in the case of the Yellow Book, the Silver Book provides for Tests after Completion, assuming such tests are provided for in the contract.³³ These tests are often called performance tests and are designed to demonstrate that the

26. Sub-Clause 14.2 of the Silver and Yellow Books.

27. Sub-Clause 14.4 of the Silver and Yellow Books.

28. The FIDIC Contracts Guide, p. 240.

29. Clause 13 of the Silver and Yellow Books. In the case of BOT projects, the lenders will wish to exercise some control over the ability of the Project Company to instruct variations.

30. Sub-Clause 9.1 of the Silver and Yellow Books.

31. Clause 10 of the Silver and Yellow Books.

32. Clause 11 of the Silver and Yellow Books.

33. Clause 12 of the Silver and Yellow Books.

plant is able to perform in accordance with any Performance Guarantees which may have been agreed upon by the parties.

The Tests after Completion are to be carried out after the employer has taken over and operated the works so that the performance guarantees can be demonstrated under normal operating conditions. Whereas, under the Yellow Book, the Tests after Completion are carried out by the employer, under the Silver Book, they are carried out by the contractor with the assistance of the employer as regards personnel, electricity, fuel and materials.

Both the Silver and Yellow Books provide that the contractor may be liable for "non-performance damages" in a specified amount to the extent that the works fail to comply with the Tests after Completion.³⁴

4. *Limitations on liability*

Given the higher degree of risk which is normally assigned to the contractor in a BOT project, it is customary for the contractor to limit its liabilities in various ways.

Mention has already been made of the limit or cap on the contractor's liability for delay damages.³⁵

In addition, the Silver Book, like the Yellow Book, provides:

(a) that neither party shall be liable to the other for certain losses that the other party may suffer (loss of use of any Works, loss of profit, loss of any contract or indirect or consequential loss or damage, subject to certain exceptions), and

(b) for an overall cap on the contractor's liability to the Employer "under or in connection with the Contract" subject to certain exceptions. Unless another sum is stated in the Particular Conditions, this overall cap is stated to be the Contract Price.³⁶ Contractors are likely to want to lower that cap to a relatively small percentage of the Contract Price.³⁷

In the author's view, specifying a cap (albeit with exceptions) on the contractor's liability to the employer "under or in connection with the contract" (as in the case of Sub-Clause 17.6, second paragraph) is much too broad. The cap should be restricted to covering the contractor's liability to the employer for breach of contract and not any liability to the employer under or in connection with the contract, which could encompass even the ordinary performance by the contractor of his contractual obligations to the employer (such as the performance of an instructed variation or of remedial work during the Defects Notification Period³⁸), which was surely never intended.

34. Sub-Clause 12.4 of the Silver and Yellow Books.

35. See Section III.B.5 above and Sub-Clause 8.7.

36. Sub-Clause 17.6 of the Silver and Yellow Books.

37. On the other hand, in the case of a BOT project, the lenders may want to limit any exclusions of the contractor's liability and to see any cap on its liability increased.

38. Defects Notification Period refers to the period for notifying defects after completion. Usually, this period is about one year.

5. *Correction of defects*

Under most construction contracts, the contractor must remedy defects which are discovered in the works within a certain period after take-over or completion. The length of this period will depend on the nature of the project. In practice, this period will be at least 12 months and, under the FIDIC contracts, is referred to as the Defects Notification Period.

Under the Silver and Yellow Books, the contractor must execute all work required to remedy defects or damage which may arise during a Defects Notification Period.³⁹ The contractor is liable for the cost of remedying the defect if it was due to the design of the work or to poor workmanship or any other cause attributable to the contractor. If the defect or damage is due to any other cause, then the contractor is entitled to be paid for it as though it were a variation.⁴⁰

If or to the extent that the works or any part of them cannot be used for the purposes for which they were intended by reason of such defect or damage, then the Defects Notification Period may be extended but it cannot be extended for more than two years.⁴¹

The Silver Book's provisions regarding the contractor's liability for defects after take-over or completion are subject to local mandatory law, e.g. decennial liability as provided for under French law and, with variations, as provided for under the laws of other countries whose law is derived from the Napoleonic Code.

6. *Guarantees*

In order to ensure, in part, the good performance of the contract by the contractor, the Silver Book, like the Yellow Book, provides for the contractor to supply four different guarantees, as follows:

- (1) a performance security,⁴²
- (2) an advance payment guarantee (to secure the return or recovery of any advance payment that may have been made),⁴³
- (3) security in the amount of any retention money,⁴⁴ and
- (4) where a subsidiary company acts as the contracting party, possibly a parent company guarantee.

While the Silver Book envisages that the first three types of guarantees may take different forms, as a practical matter, in the author's experience, lenders will practically always insist that these guarantees take the form of on-demand bank guarantees.

39. Sub-Clause 11.1 of the Silver and Yellow Books.

40. Sub-Clause 11.2.

41. Sub-Clause 11.3.

42. Sub-Clause 4.2.

43. Sub-Clause 14.2.

44. Sub-Clause 14.3(c).

7. *Changes in law*

The Silver Book, like the Yellow Book, contains a clause entitling the contractor to claim for an extension of time and additional costs as the result of changes in Laws (as defined) of the country where the site is located, after the Base Date.⁴⁵

8. *Force majeure*

Under the Silver Book, as under the Yellow and Red Books, the *force majeure* clause is essentially the same. Under this clause, *force majeure* is quite broadly defined. It refers to an "exceptional event or circumstance" beyond a party's control which it could not reasonably have provided against or could not reasonably have avoided and which is not substantially attributable to the other party. Examples are certain political events such as war, hostilities or invasion and certain natural catastrophes such as earthquake, hurricane and volcanic activity.⁴⁶

While, in theory, *force majeure* may affect either party, in practice, it will usually affect the contractor as he is the only one engaged in the physical activity of building the works.

If the contractor is prevented from performing any of his obligations by *force majeure*, he is entitled to an extension of time and, in the case of war or certain war-like events, to his increased costs. The award of costs by a *force majeure* clause is a bit unusual and not all lenders might agree to this.

If execution of the works is prevented for a continuous period of 84 days by *force majeure*, or multiple periods which total more than 140 days, then either party may give notice to the other of termination of the contract.⁴⁷

It needs to be borne in mind that until these periods have elapsed, the contractor is bearing the costs of maintaining the site yet is not being paid by the employer as no work is being done. This is why the contractor must be given the right to terminate the contract at some point. If the employer wants the contractor to remain on site after this point, he may always offer to pay the contractor his costs of having to do so.

Force majeure does not apply to the obligation of each party to make payments to each other.⁴⁸

45. Sub-Clause 13.7 of the Silver and Yellow Books. In the case of a BOT project, lenders and the Project Company will wish to ensure that this clause is back-to-back with the concession agreement and, consequently, that any right to an extension of time and costs under the construction contract can be passed on to the state under the concession agreement. Hence, change in law protection under the construction contract will extend (as is true under the Silver Book) only to laws in the jurisdiction of the project and not, for example, the contractor's home jurisdiction.

46. Sub-Clause 19.1.

47. In the case of BOT projects, in the author's experience, the corresponding periods are longer, e.g. 180 days rather than 140 days.

48. Sub-Clause 19.2.

Finally, the *force majeure* clause contains a provision (Sub-Clause 19.7) to the effect that, if an event arises which makes it impossible or unlawful for either party to perform the contract, then the contract can terminate immediately.⁴⁹ An example of impossibility would be where the site had been destroyed by an earthquake or washed away by a flood and, consequently, could no longer be built on in the manner foreseen.

9. Suspension and termination

Under the Silver Book, the provisions relating to suspension and termination do not differ significantly from those in the Yellow and Red Books.

(a) Suspension

As is generally the case in all construction contracts, the employer has the right to suspend the work but is obliged to grant the contractor an extension of time and its costs during the period of the suspension.⁵⁰ If the suspension continues for more than 84 days, the contractor may have the right to terminate the contract.⁵¹

However, under the Silver and Yellow Books, the contractor may also have the right to suspend the work where:

- (1) the employer does not provide information as to the arrangements which have been made to pay the Contract Price, or
- (2) the employer is not paying the contractor on time.⁵²

(b) Termination

The Project Company will want to be able to terminate the construction contract if the concession agreement terminates and regardless of the reason for which the concession agreement terminates.

The Silver Book, like the Yellow Book, provides the Project Company (the employer) with that possibility as it would enable the Project Company to terminate the construction contract at any time for its convenience.⁵³ Upon such termination, the contractor is entitled to be paid essentially for the work it has done and its repatriation costs.⁵⁴

49. In the case of a BOT project, the Project Company and the lenders will want to be sure that any *force majeure* clause in the construction contract is back-to-back with the *force majeure* clause in the concession agreement and, therefore, that any event of *force majeure* under the construction contract can be passed through to the state under the concession agreement. Thus, in the interests of the Project Company (and the lender), the *force majeure* clause in the construction contract should, if anything, be narrower than the *force majeure* clause in the concession agreement.

50. Sub-Clauses 8.8 and 8.9.

51. Sub-Clause 8.11.

52. Sub-Clause 16.1 of the Silver and Yellow Books. See, in this connection, Sub-Clauses 2.4 and 14.7 of both books. While these seem to be very reasonable provisions from the contractor's viewpoint, in the case of a BOT project, lenders, who are concerned to ensure timely completion, may wish to curtail them.

53. Sub-Clause 15.5.

54. Sub-Clauses 15.5 and 19.6.

In addition, the Project Company (the employer) may terminate the contract for default by the contractor upon 14 days notice and the Project Company may terminate immediately in the case of bankruptcy or bribery.⁵⁵ In the case of termination of the contract for default, the contractor will be liable for the Project Company's damages up to any limit or cap on liability which may have been provided for.⁵⁶

The contractor may also terminate the construction contract in limited circumstances in the case of a default by the Project Company.⁵⁷

10. *Claims, disputes and arbitration*

The claims, disputes and arbitration provisions of the Silver Book do not differ significantly from those in the Yellow Book or, indeed, the Red Book. Like the FIDIC Red and Yellow Books, the Silver Book provides for multi-stage procedures to deal with claims and disputes, respectively.⁵⁸ This is designed, if both parties cooperate and are in good faith, to permit claims and disputes to be settled, if possible, at the earliest practical stage.

The only real difference with the Yellow Book is that, under the Silver Book, claims must be notified to, and settled by, the employer whereas, under the Yellow Book, they are notified to, and settled by, the engineer. But there is a significant difference between the Silver and Yellow Books, on the one hand, and the Red Book, on the other, as regards dispute resolution in that the Silver and Yellow Books provide for an *ad hoc* Dispute Adjudication Board whereas the Red Book provides for a permanent Dispute Adjudication Board. This difference is explained by the fact that the Silver and Yellow Books assume most work will be done offsite (e.g. such as the manufacture of gas turbines for a power plant in a factory) whereas the Red Book envisages most work to be done on the site making a permanent Dispute Adjudication Board appropriate.

The stages in the procedure for the settlement of claims and disputes under the Silver, Yellow and Red Books are, as follows:

(1) The contractor is required to give a notice of claim within 28 days after becoming aware of it.⁵⁹

55. Sub-Clause 15.2. In the case of a BOT project, the Project Company and the lenders will, so far as possible, want to pass through to the contractor the suspension and termination risks reflected in the concession agreement. As the same time, the Project Company and the lenders will want the freedom to replace the contractor in an appropriate case.

56. See, e.g., Sub-Clause 17.6, excluding liability for indirect or consequential loss or damage.

57. Sub-Clause 16.2.

58. See Sub-Clauses 3.5 and 20. See also the author's article Contractor's claims under the FIDIC contracts for major works, v. 21, n. 4, 2005, *Construction Law Journal*, London, England.

59. Sub-Clause 20.1.

(2) The contractor is required to submit a fully detailed claim within 42 days.⁶⁰

(3) Within 42 days thereafter, the employer is required to respond to the claim with approval or disapproval and detailed comments.⁶¹

(4) The employer and the contractor must then consult in an endeavor to reach agreement, failing which the employer must make a "fair determination" of the claim under Sub-Clause 3.5.

(5) If the contractor is dissatisfied with that determination, it may submit the matter as a dispute to a DAB pursuant to Sub-Clause 20.2 – which, in the case of the Silver and Yellow Books, is an *ad hoc* DAB – and, if dissatisfied with the DAB's decision, to international arbitration pursuant to Sub-Clause 20.6.⁶²

III. CONCLUSION

Any construction contract for a BOT project is likely to be heavily negotiated to take account of the specific features and needs of each project and the requirements of lenders. If the contract had originally been drawn up based on a standard form, then almost inevitably, when the time comes for signature, it is likely to be a very different document from the standard form upon which it had been based.

Nevertheless, when preparing a construction contract for a BOT project, as for any transaction, it is useful to have a model or precedent of some kind as a starting point. The Silver Book can serve as such precedent. By placing more risk on the contractor than is usual in construction contracts, the Silver Book is responsive to the needs of lenders and sponsors in BOT projects. At the same time, the allocation of risk between the parties needs to be carefully thought out and considered in light of the specific features of each project (blindly placing more risk on the contractor is not a good solution). Among other things, the cautionary statements of FIDIC in the Introductory Note to the Silver Book (referred to above⁶³) must be taken into account, such as that the contractor be afforded adequate time and opportunity before submitting its bid to study, evaluate and price every additional risk it is required to assume.

It also needs to be appreciated that, like the Red and Yellow Books, the Silver Book remains a standard form of construction contract and nothing more.

60. Sub-Clause 20.1.

61. Sub-Clause 20.1.

62. See the author's article "The arbitration clause in FIDIC contracts for major works", v. 22, Part 1, January 2005, *The International Construction Law Review*, London, England. In the case of a BOT project, the Project Company and the lenders may want the contractor to participate in some manner in procedures for the settlement of disputes under the concession agreement that correspond to disputes under the construction contract (if the Grantor would agree, which is unlikely) and/or to be bound by the results of any disputes procedure under the concession agreement that relates to a corresponding dispute under the construction contract.

63. See Section III.B.4 above.

While it is intended for use in a BOT project, it needs to be adapted and supplemented to take account of the specific needs or requirements of lenders and the Project Company. These needs and requirements may include provisions for:

- (a) sponsor support to provide additional funding to the project, e.g. to finance cost overruns, if any,
- (b) a direct agreement between contractors and lenders, providing the lenders with an acknowledgment of their status as security assignees of the contract and any performance security for the contract, with certain rights to cure Project Company defaults and to step-in into the turnkey contract in place of the Project Company, and with certain other rights,
- (c) insurance during construction and inclusion of lenders' endorsements in such insurance,
- (d) making the contractor's right to claim additional money or time, where appropriate, dependent on (or back-to-back with) the Project Company's rights to the same benefits under the concession agreement, and
- (e) the lenders' rights generally, including provision for a lender's engineer to be appointed and for some degree of control by the lenders and/or the lender's engineer over such things as time extensions, variations, payments to the contractor and the issuance of certificates relating to take-over, testing and final completion.

Consequently, these need to be addressed separately.

Nevertheless, subject to these considerations, the Silver Book is a good starting point for the drafting and negotiation of the EPC contract for a BOT project.

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CARLOS HENRIQUE DE CARVALHO FILHO

Rua do Bosque, 820 – Barra Funda
Tel. 11 3613-8400 – Fax 11 3613-8450
CEP 01136-000 – São Paulo
São Paulo – Brasil

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